

**WRITING DEVELOPMENT OF CHINESE LEARNERS OF
ENGLISH: A SYSTEMIC FUNCTIONAL LINGUISTICS
PERSPECTIVE**

BY

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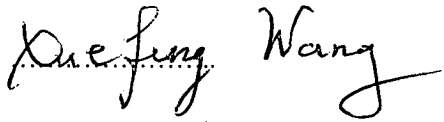
**A THESIS SUBMITTED IN FULFILMENT OF THE
REQUIREMENTS OF THE DEGREE OF DOCTOR OF
PHILOSOPHY**

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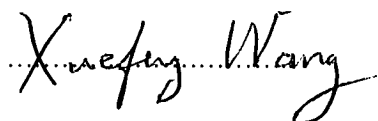
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Xuefeng Wang

August 2008

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ABSTRACT

A big challenge facing many Chinese learners of English is how to write texts in English which are structurally complex in terms of syntax and lexical density. Grammar teaching is an important aspect of the English curriculum in Chinese tertiary institutions. However, it is heavily based on traditional grammar which tends to focus on rules and prescriptive patterns. Systemic Functional Linguistics (SFL) theory developed by Halliday and his colleagues introduces four grammatical features which are useful for the teaching of writing: Theme and Rheme, lexical density, nominalisation and grammatical metaphor. They are theoretical concepts which are used to measure linguistic complexity of texts. Developing an awareness of these grammatical features is crucial to Chinese learners of English. This study is an action research which deals with the implementation of Systemic Functional Linguistics in teaching English writing to Chinese students in a Chinese tertiary education context. The study investigates the students' general understanding as well as use of SFL in general and the four grammatical features of SFL in particular. It compares the differences in writing style before and after the students were taught the four grammatical features of SFL and examines their effectiveness in improving the students' writing skills. The study also examines the teachers' views on the teaching of English writing to Chinese students. The results of this study reinforce the view that the teaching of Systemic Functional Linguistics has an important role in promoting linguistic awareness and writing competence in Chinese students.

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CHAPTER 1. INTRODUCTION

1.1. Introduction

This research is about the writing development of Chinese learners of English. It attempts to investigate the effect of teaching Systemic Functional Linguistics (SFL) on the improvement of the students' writing. The focus is on the four grammatical features: Theme and Rheme, lexical density, nominalisation and grammatical metaphor.

This chapter gives a general introduction of the study and starts with a relevant personal background of the researcher which has led to the pursuit of this study. Social and political factors are also presented to provide some insights into the increasing popularity of English teaching in China. In the discussion, related theoretical context is also introduced as an important part of the background in which SFL grammatical features are used in developing the English writing of Chinese learners. The main discussion will focus on the methodological aspects of this study such as research aim, objectives, data collection and data analysis.

1.2. Personal journey leading to this research

A study is conducted for a purpose. Apart from the research aim and objectives which are essential in any study, the researcher's personal background and the social and political context of the research are also important factors which motivate a study. Overtly and covertly, the personal background of the researcher plays a key part in the choice of topic and the conduct of the research. Thus it is important to include some personal background of the researcher as a personal journey leading to the study. The first person singular

pronoun “I” is used here on purpose to describe this personal journey and the social context of the research.

I am currently an English teacher in the English Department, Taiyuan Teachers College, China. As an English language learner, a teacher of English and a researcher, I have had the experience of learning a foreign language and I know the shortcomings of being a student. I understand the difficulties and challenges they face, as well as the sense of achievement and the feeling of happiness when they manage to master the language. As a teacher of English in China, I have developed an awareness of the students’ learning experiences and the teachers’ views and attitudes towards teaching and learning English in China. The surge in the popularity of English has brought about pressure from various perspectives, namely social and economic development, transformation of educational ideology, higher parental expectations, higher teaching and research requirement and personal promotion. Thus I was not only an outside observer looking at the participants in this study through a research window, but more importantly also a participant observer who is very familiar with the context of the study.

China is witnessing rapid economic development and is facing globalisation and a competitive international environment. Education has also been affected by the strength of the economic growth. Taking English education in China as an example, great reform has taken place in various aspects of the curriculum.

During my schooling as a student of English, teaching English in China was strongly teacher-centred, textbook-dependent and grammar-orientated. The teaching methods which English language teachers used were grammar-translation and sentence patterns practice. At that time, it was very difficult to obtain English textbooks, except for some very old materials such as English 900 and Linguaphone English. It was a luxury for us to have access to a set of New Concept English compiled by L.G. Alexander. Thus, learning text by

heart was a common practice. The teaching concentrated on analysis of morphological and syntactic units in isolation and had little reference to the use of the language in its social context. As a result, learning English was learning its rules rather than its function and meaning. Like many other students at that time, it was very hard for me to communicate in English because my mind was dominated or haunted by the detailed grammatical rules rather than constructing ideas and forming expressions. In fact, texts, words and sentence structures in textbooks were the focus of the curriculum. As a passive learner, I was filled with language knowledge by the teacher and through the textbooks. For me English was a subject rather than a communication tool.

After graduation from the university in 1984, I became an English teacher. I felt very optimistic as English has received great attention in China since the open door policy. It has been placed as one of the three key subjects (Chinese, Mathematics and English) taught in primary and secondary schools and a basic requirement for enrolling in universities, postgraduate studies and even a job. English teaching syllabuses for both secondary and higher education in China have been revised several times to meet the needs of English education development in China. The aims, objectives and methodology of English teaching and learning have been gradually improved by China's Education Commission in response to the requirements for English language teaching and learning. From the late 1970s after the Cultural Revolution to 2003, the Secondary School English Teaching Syllabus has been re-issued 10 times and revised three times (Curriculum Research Team 2004) and the teaching methods have experienced changes from Teacher-centred Grammar-translation, Structural, Structural and Communicational to Task-based Student-centred. The syllabuses have become more and more systemic and dynamic. For example, the College English Teaching Syllabus 1985 aimed to provide students with the ability to acquire information through English for their professional needs. Students must have proficient reading ability, certain listening ability and elementary speaking and writing ability. The methodology

which teachers use should be student-centred. The command of functional and notional words increased from 1,600 to 4,000. The revised 1999 Syllabus set higher targets and required students to have the ability to obtain information through communication in English. Students should possess strong language skills and have better study strategies and cultural accomplishment. They were expected to have strong reading ability and fairly good listening, speaking, writing and translation ability so that they could communicate competently in English (Revising Team 1999). The students' command of vocabulary as set out in the 1999 Syllabus should reach 5000 words.

According to the two National English Teaching Syllabuses, the 1999 version is the more well-developed and comprehensive syllabus which includes the development of not only students' language skills but also study strategies and cultural awareness. It is situational because it recognises the importance that certain language features are pertinent to particular social situations. It is functional because it gives priority to the needs of the students and sets out a desired "communicative capacity" as a starting point. As such, teaching English is far more than just teaching grammatical rules. According to the 1999 Syllabus, I really felt challenged to help students meet the requirements. The first challenge was that I had to break my traditional views of teaching and to make my teaching communicative and tasked-based to develop each student's ability to acquire information through communication rather than via grammatical translation which I had got used to. The second challenge was how to help students develop solid language skills in reading, listening, speaking and writing. The third challenge was how to enhance students' learning strategies and cultural awareness. In other words, teaching should be student-centred. "Situational" and "functional" were the two main focuses in my teaching. In order to respond to these challenges, whilst teaching, I learnt important concepts, principles and theories of teaching, such as Hymes' *Communicative Competence*, Wilkins' *Grammatical, Situational and Notional Syllabuses*, Munby's *Communicative Syllabus Design*, Widdowson's *Teaching*

Language as Communication, Krashen's *Second Language Acquisition*, Nunan's *The Learner-Centred Curriculum and Designing Tasks for the Communicative Classroom* and Halliday's *An Introduction to Functional Grammar*. During the teaching process, with the help of these innovative publications, I tried to translate theory into practice. Over time, I find that comparatively, reading and listening skills which involve language inputs are easier to be improved. However, speaking and writing are the skills involving language output with which most students have problems. Similarly, my students also had problems expressing themselves in English both orally and in writing, even though their learning focuses are more communicative, situational and functional.

For many years, English writing has become a major issue in teaching English to Chinese students. Teaching English writing has taken many different forms but the focus has been mostly on essay construction, genre analysis, topic construction and referencing. The development of students' writing mainly deals with vocabulary items, sentence structures, grammar, generic expression, and teachers often favour the fixed word order, "S + V + O + adverbial". In terms of students' writing, it is greatly influenced by Chinese thinking patterns, cultural differences, Chinese language and so on. Students experience difficulties in how to communicate information in different discourses, and how to organise written texts appropriately. As a result, rather than merely describing language structure isolated from the meaning, teachers ignore some of the structural options frequently found in natural data and the functions of the language which are organised to describe how meanings are made in text. Academic writing has also been the weakness of my students. They often write academic papers in spoken English and they have no awareness of the characteristics of academic writing.

Halliday's Systemic Functional Theory plays an important part in popularising linguistics, applied linguistics, and English language and literature.

International and national conferences on linguistics, second language acquisition, language assessment, English for special purposes, language and culture and ICT in language teaching, have promoted the communication between Chinese EFL teachers and EFL/ESL teachers around the world. These conferences improve teachers' awareness of research and how to translate theories into practice. Influenced by the scholars in the 27th International Systemic Functional Linguistics (SFL) Conference in Melbourne in 2000, in which I presented a paper entitled "Functional Grammar in Chinese Analysis", I found SFL quite useful in developing writing especially academic writing skills. I developed an interest in learning the four grammatical features of SFL - Theme and Rheme, lexical density, nominalisation and grammatical metaphor which are theoretical concepts used to measure the linguistic complexity of a text. Systemic Functional Grammar devised by Michael Halliday relates grammatical structure to ways in which people mean when they use language in context.. The awareness of the thematic structures in writing is crucial to learners of English because among various structures, the thematic structure is the first one which gives the clause its character as a message.

I find that in dealing with SFL in China, scholars and teachers concentrate their studies mostly on theoretical descriptive applications rather than using the theory to develop language proficiency in the target language for each student. I thus decided to conduct research in the area of SFL with a focus on turning theory into practice as Australian systemicists (Christie, 2005; Christie & Martin, 2006; Halliday, 1975; Hasan & Martin, 1989; Hasan & Perrett, 1994; Martin, 1992; Perrett, 2000; Unsworth, 1993a, 1993b, 2000a, 2000b; Unsworth, Astorga, & Paul, 2002) have made good use of Hallidayan linguistics in the educational field for many years. Scientific study of the differences of textual organisation between the Chinese and English languages is essential and it is more important to recognise how English texts, especially written texts, are organised. Apart from the search for research evidence about the application of

SFL in TESOL, this study is motivated by my personal interest in SFL and my desire to help Chinese students in developing writing competence in English.

1.3. Social and political context of the research

Due to increasing interaction with the rest of the world, China has shown more interest in joining the global family in promoting economic development, international relations, and co-operative engagement with other countries and governmental organisations. English with its unique status as a worldwide language has received great attention in China.

With the development of China's economy and the introduction of the "Open and Reform Policy" in the early 1980s, China has established closer relationships with international forces in various areas such as economic, social, political, cultural and educational. For example, in education and the learning of English, Chinese people are eager to communicate with English speaking foreigners and to go abroad to enhance their skills and cultural awareness of English. At the same time, many foreign companies or enterprises have set up offices in China, and their Chinese employees are expected to be competent in both oral and written English. In addition to formal English education at school, there are also China Central TV (CCTV) English programs, English TV broadcast, English radio programs, different kinds of English newspapers and magazines, private language schools, language training courses and teachers training courses in universities. Specifically, it is not uncommon in China to have foreign teachers teaching in universities, colleges and secondary schools even in the kindergartens in big cities. They teach not only English language but also English culture which promotes further understanding and friendship internationally.

After China's accession to WTO, high attention has been given by the Chinese government to promote international relationships in education with the other countries. There are three main reasons:

- Demand-driven: The changing nature of the global economy and the global labour market has created a growing demand for an international higher education.
- Policy-driven: EOCD (the Equal Opportunities and Community Development team) countries redefined internationalisation by seeking to reconcile commercial and economic concerns of higher education with socio-cultural and interpersonal dimensions of global relations, which enable people to acquire multicultural and cosmopolitan sensitivities.
- Market-driven: The imperatives of the market are now driving international trends worldwide to enhance competition among universities to "market" their programs to attract foreign students. For example, in the international education area, over 10,000 American students studied in China in 2005 and an MOU for Expanding Educational Exchange and Cooperation was signed between China and USA in November, 2006 (People's Daily Online, 2006). These educational exchanges have enhanced foreign language teaching and learning in China.

In China, with the development of English education, English language teaching and training is becoming a profitable industry, as Chinese people are more aware of the importance of English as an international language. The Beijing Evening News reported that the craze for learning English even extends into temples. A nun from Lingquan Temple said, "I hope I can speak fluent English someday so that I can freely communicate with foreigners and even introduce Buddhism to them"(People's Daily Online, 2002). Statistics show that in 2001, the industry in Beijing made a gross profit of 700 million

yuan (US\$ 84.68 million) in 2005 by providing English language training courses to more than 200,000 people. Shanghai is another centre for English training in China. The Wall Street Institute (WSI) invested 40 million yuan to set up branch institutions and very quickly attracted more than 1,000 trainees, mostly from foreign companies in China (People's Daily Online, 2002). New Oriental Education & Technology Group was born out of Beijing New Oriental School, which was established on 16 November 1993. Now, it is a large-scale comprehensive education and technology group combining education and training: education research and development: book, audio and video publishing: overseas education services: vocational education: online education: and the research and development of educational software. Today, the New Oriental Education & Technology Group has a network of 32 schools, 115 learning centres, and 15 New Oriental bookstores in 31 cities, with approximately 4 million student enrolments by the end of 2006. It is listed on the New York Stock Exchange on 7 September 2006, the first private education company to achieve this feat in China (New Oriental, 2007).

Beijing will host the 2008 Olympics. English thus receives further attention due to its role in international communication. To prepare for the Beijing 2008 Olympic Games, it is reported that at least 6 million Chinese volunteers will need to improve their English language skills. In this case, developing students' language abilities to cater for this big world event is essential. In order to arouse public interest in English learning for the purpose of 2008 Olympic Games, CCTV International and the Foreign Language Teaching and Research Press (FLTRP) co-sponsored the CCTV Cup English Speaking Contest (Foreign Language Teaching and Research Press, 2004) to help people throughout the country to bring the world to China and to bring China to the world. China is playing a greater role in the international community and, as a result, English is becoming more important in the lives of Chinese people.

1.4. Theoretical background of the research

This research is about the writing development of Chinese learners of English after being taught Systemic Functional Linguistics grammatical features. There is a close link between language teaching and theoretical linguistics. The term “applied linguistics” implies that attempts should be made to translate theory into practice. Therefore, learning theoretical linguistics is an important part of language education for language teachers. As this study is mainly an attempt to find ways to develop language competency amongst second language learners in general and tertiary learners in particular, it is important to examine the different theoretical backgrounds and their related pedagogical implications in language teaching. The discussion will cover major linguistic theoretical orientations such as traditional grammar, structural linguistics, generative transformational grammar and functional linguistics. Further discussion of functional grammar will be given in detail in other chapters and it is the theoretical foundation on which this study was based.

- *Traditional grammar*

Traditional grammar is a pre-20 century language description which is based on earlier grammars of Latin or Greek. As a product of the prelinguistic era, it lays emphasis on correctness, literary excellence, the use of Latin models, and the priority of the written language (Hu, 2001). Traditional grammars have evolved as idealised, static, abstract, and artificial impositions that bear a distant relationship at best to the structure of the languages they purport to describe. To some, they are therefore entirely inappropriate to the practical communication needs of today’s language students (Pennington, 2002). Under traditional language teaching, students learn to know many taboos. For example, in English one should not use “split infinitives” or end sentences with prepositions, because these are not allowed in Latin. The traditional approach

to language teaching involves the presentation of numerous definitions, rules and explanations, and it underlies the teacher-centred grammar-translation method, i.e. the main teaching and learning activities are translation and grammar study (Hu, 2001). The following rules are commonly taught by teachers adopting the traditional grammar approach:

- changing singular nouns into plural nouns:
book and books, box and boxes, child and children
- changing active voice into passive voice:
John hit Jim. (active)
Jim was hit by John. (passive)
- constructing sentences in different tenses:
Jane is a student. (present tense)
Tim has gone. (present perfect tense)
- Using relative pronouns:
Jack is the man who built my house.
This is the house which Jack built.

Traditional grammarians tend to focus on a privileged type of English and written language. Different varieties of English are regarded as non-standard. Thus traditional grammar tends to be very prescriptive and not descriptive. In the view of many modern linguists, such an approach is damaging to language learning. They argue that one should teach the language, not teach about the language, particularly using outdated knowledge of language.

- ***Structuralist linguistics***

Structuralist linguistics describes linguistic features in terms of structures and systems. Like traditional grammars, it concentrates on the grammatical structures of a language using a method of synchronic linguistic analysis employing structuralism, in contrast especially with those formal structures, such as phonemes or sentences which make up systems such as phonology or syntax. Structuralist grammar for the first time provides description of phonological systems which helps the systematic teaching of pronunciation and this describes the current spoken language that people use in their daily conversation. However, traditional grammar has no consideration in this area. In language teaching, structuralist linguists are influenced by behaviouristic view that one learns a language by building up habits on the basis of stimulus-response chains which imply a pattern drill technique aiming at the learner's automatisms for language forms. Structuralist grammarians tend to focus on overt structure and pattern drill. In language teaching, we often see drills such as:

- Dogs are here.
- Cats are here.
- Birds are here.
- I see myself in the mirror.
- You see yourself in the mirror.
- She sees herself in the mirror.
- He sees himself in the mirror.

- ***Transformational-generative linguistics***

Transformational-generative grammar which was developed by Chomsky (Chomsky, 1957) sees language as a system of innate rules. It attempts to

define rules that can generate the infinite number of well formed grammatical sentences possible in a language. Instead of starting from a behaviourist analysis of minimal sounds, transformational-generative grammar starts from a rationalist assumption that a deep structure underlies a language, and that a deep structure underlines all languages. Transformational-generative grammar describes the construct of a sentence as composed of a deep structure, a surface structure and some transformational rules (Chomsky, 1957). Transformational-generative grammar seeks to identify rules that control relations between parts of a sentence, on the assumption that beneath such aspects as word order, a fundamental structure exists. Transformational-generative grammar has been translated into language teaching. For example, the transformational rules may assist the teacher in teaching complex sentence construction. In teaching literature, transformational-generative grammar provides a new instrument for style analysis. For instance, a writer's style can be identified according to certain kinds of transformation which frequently appear in his writing, such as nominalisation, verbalisation, adjectivisation, adverbialisation and passivisation. (Ohmann, 1964).

Language teachers who adopt generative transformation grammar (the early model introduced by Chomsky) may pay attention to the following activities in a classroom:

- Transforming kernel sentences into derived sentences:
Dogs bark to *Do dogs bark?*
People are kind to *People are not kind.*
- Describing structural ambiguity in sentences in terms of deep structure and surface structure:
They are stunning girls. (surface structure)
 Deep structure 1: *stunning* is a part of the verbal phrase *are stunning.*
 Deep structure 2: *stunning* is a part of the noun phrase *stunning girls.*

The following two sentences have the same surface structure but different deep structures:

- a. John is eager to please.
(John is the deep subject of the verb *please*.)
- b. John is easy to please.
(John is the deep object of the verb *please*.)

- ***The theory of communicative competence***

According to Hymes (1971), communicative competence should focus on how language is used in real social context. It is not just about grammatical correctness. The emphasis should be on social appropriateness. .

Canale and Swain's definition has become canonical in applied linguistics. According to Canale and Swain (1980) that communicative competence also has four components: (1) grammatical competence — words and rules; (2) sociolinguistic competence — appropriateness; (3) discourse competence — cohesion and coherence; and (4) strategic competence — appropriate use of communication strategies.

Bachman (1990) divides communicative competence into broad headings of “organisational competence” which include both grammatical and discourse (or textual) competence, and “pragmatic competence” which include both sociolinguistic and illocutionary competence.

The theory of communicative competence depends on the context in which the interaction takes place. In language teaching, it is learner-centred teaching, i.e. the teacher teaching how in different situations the same sentence can perform the function of statement, command, or request. With the influence of communicative language teaching, it has become widely accepted that

communicative competence should be the goal of language education, central to good classroom practice (Savignon, 1998).

The non-traditional approaches of Communicative Language Teaching (Munby, 1978; Widdowson, 1978) and Functional Grammar (Halliday, 1985b; Wilkins, 1976) have gone some way towards addressing the problem that traditional grammar and grammar teaching lacks relevance and meaningfulness.

Communicative Language Teaching has sought to address the gap in traditional language teaching and between grammar and usage by focusing on the communicative process and the negotiation of meaning among participants (Hinkel, 2002a).

- *Functional linguistics*

Like the Communicative Language Teaching approach, Systemic Functional Linguistics (Halliday, 1985b) represents an important advancement in tying grammar to meaningful functions. Halliday's work has had a major positive influence on linguistics and language pedagogy.

Halliday's Systemic Functional Linguistics takes a semantic-sociolinguistic approach, and it sees language as an instrument used to perform various functions in social interaction (Hu, 2001). A functional approach is concerned with how language enables us to do things: to share information, to enquire, to express, to entertain, to argue, to get our needs met, to reflect, to construct ideas, to offer our experience and make sense of the world. It looks at how people use real language for real purposes. The main focus of a functional approach to language stresses meaning and how language is involved in the construction of meaning. It sees language as a resource for making meaning.

The functional approach to language is not interested in a set of rules which prescribe correct and incorrect usage since language is dynamic and ever-

evolving and in real life it is not a complete, ideal system complying with rules or pre-determined categories. Language is developed for the purpose of satisfying the needs of people in society, so when it fulfils those needs effectively, language is functional.

For Halliday, learning language is learning to mean. In order to be able to mean, one has to master a set of language functions which have direct relation to clause forms. According to SFL theory, the structural shape of a clause in English is determined by three metafunctions: the ideational function, the interpersonal function, and the textual function (Halliday, 1985b, p. 53). These are the three kinds of meaning that are embodied in human languages. Each of the three metafunctions is about a different aspect of the world, and is a different mode of meaning of clauses.

The Systemic Functional Linguistics theory developed by Halliday and his colleagues introduced four grammatical features which are useful for teaching writing: Theme and Rheme, lexical density, nominalisation and grammatical metaphor (Halliday, 1977a, 1985b, 1985c, 1994a, 2000; Halliday & Hasan, 1976, 2001; Halliday & Martin, 1993; Halliday & Matthiessen, 2004). They are theoretical concepts which can be used to examine linguistic complexity of texts. Theme functions as the “starting point for the message” (Halliday, 1985b, p. 39), the element which the clause is going to be “about” and which has a crucial effect in orienting listeners and readers. The distribution of different Themes illustrate how texts are thematically organised in relation to the purpose of writing. Halliday and Martin (1993) define lexical density as a measure of the density of information in any passage of text according to how tightly the lexical items (content words) have been packed into the grammatical structure. Lexical density helps distinguish spoken and written English and it is characteristic of academic writing and science writing. Nominalisation is known as the single most powerful resource for creating grammatical metaphor (Halliday & Matthiessen, 2004). Nominalisation is the use of a nominal form

to express a process meaning (Thompson, 1996). It has been suggested that nominalisation probably “evolved first in scientific and technical registers” and then gradually spread to other areas of adult discourse and becomes a mark of prestige and power (Halliday & Matthiessen, 2004). Grammatical metaphor is a language resource used to condense information by expressing concepts in an incongruent form which is very valued in scientific and academic registers as a way of expressing “objectification” and “abstraction”, and grammatical metaphor has been of particular importance in the evolution of scientific writing, especially in the form of nominalised processes.

Systemic Functional Linguistics concerns not only the formal system of language, but also the functions of language in society. Its scope is broader than that of former linguistic theories. In the field of language teaching, it leads to the development of functionally orientated curricula and pedagogy, which have attracted increasing attention in the area of language teaching (Christie, 2005; Christie & Martin, 2006; Derewianka, 2003; Halliday, 1975; Hasan & Martin, 1989; Hasan & Perrett, 1994; Martin, 1992; Perrett, 2000; Unsworth, 1993a, 1993b, 2000a, 2000b).

1.5. Aims and objectives of the research

This study aims to research on the impact of Systemic Functional Linguistics theory developed by Halliday and its four grammatical features, Theme and Rheme, lexical density, nominalisation and grammatical metaphor upon the development of Chinese EFL tertiary students in English writing. Teaching effectiveness, difficulties, problems, students’ attitudes and pedagogical implications in teaching are also discussed. This study has six main objectives:

1. to examine the suitability of Systemic Functional Linguistics in teaching Chinese learners to write English. Two research aspects are the focus of this objective: (a) the students’ understanding and the

application of SFL and its four grammatical features; and (b) the students' participation in the classroom activities of SFL learning.

2. to identify the writing differences between pre-teaching and post-teaching of the four grammatical features of SFL chosen in this study .
3. to examine the difficulties and problems of using the four grammatical features in the process of teaching and learning.
4. to investigate students' views on learning SFL and their application.
5. to identify the effectiveness and pedagogical implications of using the four SFL grammatical features in teaching Chinese learners to write English.
6. to investigate the teachers' views on teaching English writing to Chinese learners of English.

1.6. Significance of the research

According to the above research context and aims of the study, this study is significant for several reasons which are presented below.

Firstly, this study is a useful exploration of the application of SFL in EFL teaching and learning in China from the perspective of an applied SFL research. Great advances have been made in the study of SFL in the last two decades in China. However, unlike Australian systemicists who have made good use of Hallidayan linguistics in the educational field (Derewianka, 2003; Hasan & Martin, 1989; Hasan & Perrett, 1994; Martin, 1992; Perrett, 2000; Unsworth, 1993a, 1993b, 2000a, 2000b; Unsworth, Astorga, & Paul, 2002), Chinese SFL linguists are more interested in descriptive applications of the theory such as translation studies of English and Chinese as well as analyses and descriptions

of English and Chinese language within the Hallidayan framework rather than on the teaching of English and/or Chinese and there are relatively few studies on the generative aspect of Hallidayan linguistics (Huang, 2002b). For foreign language learners, the application of SFL in language teaching in China should be pedagogically orientated.

Secondly, it is an attempt to help teachers to change from the traditional concept of language understanding which is mainly based on rules and prescriptive structure to understanding language in a functional way. Halliday's three metafunctions of language and the four grammatical features chosen in this study which are used in writing development reveal how language expresses its meaning and why language teaching should go beyond sentence and grammar level.

Thirdly, it is hoped that this study would make some contribution to the development in the teaching and learning of EFL writing in China with the use of SFL theory. Studies relating to EFL writing amongst Chinese have been conducted for many years such as developing writing by combining Listening and Speaking with Reading and Writing (L. M. Deng & Liu, 2003); The Length Approach (Wang, 2005); and functional writing (Liu, 2002). However, the result has not been fruitful pedagogically. Halliday's SFL theory views language as a social semiotic and a resource people use to accomplish their purposes by expressing meaning in context. Grammatical and lexical features can effectively be a focus of attention in the contexts of the texts. In addition, the control of grammatical metaphor creates the capacity of a successful writer. This study deals with the problem in the development of EFL writing amongst Chinese students by understanding the meaning of the language and by learning how to mean.

Fourthly, this study contributes to the strengthening of the use of Halliday's SFL theory in EFL teaching in China. There have been few studies which show

the effectiveness of the use of SFL in EFL teaching amongst Chinese students. From the results of both qualitative and quantitative data analysis in this study, the advantages of applying SFL theory in developing EFL writing in China can be seen. Pedagogical implications in the development of EFL writing in China are also examined from a very innovative perspective.

1.7. Research methodology

The methodologies included in this study are quasi-experimental research, questionnaire survey, interview, classroom observation and analysis of students' exercises. This study combines both quantitative and qualitative research to achieve the objectives of the study. Rossman and Wilson (1984; 1991) suggest three broad reasons for combining quantitative with qualitative research: (a) to enable confirmation or corroboration of each other via triangulation; (b) to elaborate or develop analysis, providing richer detail; and (c) to initiate new lines of thinking through attention to surprises or paradoxes by "turning ideas around" and providing fresh insight. Different methods can be used for different purposes in a study (Saunders, Lewis, & Thornhill, 1997). Using a variety of techniques may provide different perspectives on the situation, thereby increasing what is known about it (G. D. Bouma, 2000). Patton (1990, p. 187) mentions that one important way to strengthen a study design is through triangulation, or the combination of methodologies in the study of the same phenomena or programs. With reference to the discussions above, a good research should be "a crystallisation of collective wisdom" of both quantitative and qualitative research approaches.

1.7.1. Research approaches in this study

Both qualitative and quantitative approaches are employed to achieve the objectives of this study. The research approaches and methods are detailed below.

- *Quantitative approach*

Quasi-experimental research method: to identify the writing differences of the students between pre-teaching and post-teaching of the four grammatical features of SFL.

Survey questionnaires: to investigate the problems of the suitability of Systemic Functional Linguistics in teaching Chinese learners to write in English; the students' understanding of SFL; the application of SFL and its four grammatical features; and the students' views and attitudes towards learning SFL and how they apply SFL in their writing.

- *Qualitative approach*

Action research, classroom observation and analysis of students' exercises: to find out the difficulties and problems of students in using the four grammatical features in the process of teaching and learning; their participation in the classroom activities and their interests in learning SFL grammatical features.

Interviews: to get the students' views on learning SFL and their application; and the teachers' views on teaching English writing to Chinese students.

According to the methods employed in this research study presented above, qualitative research methods of interview, action research of classroom observation and analysis of students' exercises fully embody the importance of employing qualitative approach in a research. These are the cores which support the quantitative research. The effectiveness and pedagogical implications of using the SFL four grammatical features in teaching Chinese students English writing will be assessed by the findings of the research.

1.7.2. Data gathered

The whole data collection process lasted for a semester (48 class hours), from early September to the end of December, 2006 which was the first semester of the academic year of Taiyuan Teachers College, China. At each level, the students have 3 hours of lessons every week. Sagor (1992, p. 45) suggests that action researchers complete a data collection plan that identifies at least three "independent windows for collecting data on the question being investigated". Wolcott (1988) also mentions that the strength of qualitative research lies in its triangulation by collecting information in many ways rather than relying solely on one. In this case, single source of data is not enough to achieve the objective of the study and to satisfy triangulation. On the basis of these, data collection in this study included task-based data and non-task-based data. The task-based data refers to the data with an explicit focus on the students' writing before and after being taught the SFL grammatical features. The students were specifically required to produce a narrative and an expository essay with special topics and demonstrate their awareness of the grammatical features they have learnt for the purpose of writing development. Data of students' exercises were also task-based because they were driven by a task for the purpose of improving their writing competence, based on purposeful exercises related to the each grammatical features of SFL. In contrast, non-task-based data is collected from survey questionnaires, informal interviews with the teachers and

students' and classroom observation notes. The task-based data includes 720 copies of pre-teaching and post-teaching writing of one narrative essay and one exposition essay by each student in both experimental and control groups at three proficiency levels and 360 copies of the students' SFL exercise samples. The non-task-based data includes 90 copies of survey questionnaires; informal interview reports including the responses from three teachers and six students; and 4 classroom observation notes.

1.7.3. Data analyses

Data analyses are divided into two parts: task-based data analyses and non-task-based data analyses. Tasked-based data analyses cover the pre-teaching and post-teaching writing by both experimental and control group students at the three levels and the students' exercises data. The non-task-based data analyses focus on the teachers and students' informal interviews, questionnaires and classroom observation data. Data analyses in this study employ two main approaches.

Quantitative approach

The quantitative approach used in this research is descriptive analyses using mean score and percentage. The mean score refers to the mean scores of using certain grammatical features in a piece of writing and the mean scores of the responses in the questionnaires. The percentage refers to the percentage of students who used the grammatical features in their writing and the percentage of the responses in the questionnaires. Two types of data are analysed: (1) the task-based data of pre-teaching writing and post-teaching writing to see the differences of the students' writing before and after SFL teaching; and (2) the non-task-based data collected from questionnaire to investigate the students' understanding and the application of SFL and its four grammatical features as well as the students' views and attitudes towards learning SFL grammatical

features. SPSS and EXCEL are employed to perform the data analysis functions.

- ***Qualitative approach***

Qualitative approach of interpretation and discussion is used to analyse three main types of data: (1) the non-task-based data of the teachers and the students' informal interviews – to examine the teachers' views on teaching English writing to Chinese students and the students' views on learning SFL and its application which are categorised into different themes; (2) the classroom observation notes – to find out the students' involvement in the classrooms and their interests in learning SFL; and (3) the students' exercises – to examine the difficulties and problems in the teaching and learning of the four SFL grammatical features for the development of writing skills.

1.7.4. Reliability and validity

According to Burns (2004), reliability measures the subjects' level of performance by checking that they are not hindered by various factors such as motivation and mood. Validity refers to the relevance and accuracy to what is measured (Trochim, 2000).

Reliability and validity are the goals of any scientific research, but reliability is the limiting factor in determining validity. To adequately deal with the research problem, the possibility of employing more than one method stems from the fact that various methods contain their own set of assumptions about the nature of the social world and the kind of data that can be produced to increase knowledge about the world (Denscombe, 1998, p. 84).

A commonly used technique to improve the internal validity is triangulation. Burns (2004) defines triangulation as “the use of two or more methods of data collection in the study of some aspects of human behaviour”. He asserts that triangulation can be achieved by checking different data sources with the same method, or when different methods are used in relation to the same object of study.

Collecting data from different sources and using different methods are crucial to corroborate the quality of a research. In this research, the combination of multi-methods, multi-persons and multi-sites was conducted to collect data for the purpose of strengthening reliability and validity of the research. The data was collected by using multi-methods, which include not only quantitative research methods such as quasi-experimental and survey questionnaires, but also qualitative approaches such as interviews, classroom observation and students’ exercises. The data collection was also carried out in a multi-persons manner from teachers to students of different levels to explore the information so as to generate ideas as an inductive reasoning to the research questions. The collection of data was also undertaken from multi-sites to further strengthen validity of the research. The initial and obvious benefit of this is that it will involve more data, and thus will be more likely to improve the quality of research. The concept “triangulation” is therefore widely used in this research to address reliability and validity.

1.8. Limitations of the research

Any research has its strengths and limitations and this research is no exception.

1. Time limitation: The four grammatical features of SFL were taught over only a semester. It was too short to see visible improvement in the students’ writing because writing development is a comprehensive

learning process. Students should be given more time to practice English writing.

2. Genre limitation: In this research, the study focuses on two main genres of writing – narrative and expository essays. In order to examine the effectiveness of using SFL grammatical features in developing the students' writing skills, other genres should be considered to analyse the consistency of using SFL grammatical features in the students' writing.
3. Group limitation: Regarding the pre-teaching and post-teaching writing comparison, the study focuses only on comparing the experimental and control groups at different levels rather than individual data analysis. The researcher is aware that if individual data analysis is to be conducted, more useful findings could be revealed.
4. Questionnaire standardisation limitation: The questionnaire was designed according to what the students have learnt. Because of the time limitation, the part related to the students' general understanding of SFL is too general for detailed investigation. That part might need further development to cover more SFL concepts.
5. The research study is conducted in one particular environment, i.e. the English Department of Taiyuan Teachers College. One needs to be careful in generalising the findings to other university students, especially non- English major students.

1.9. Ethical issues of the research

This research study involves classroom activities in developing Chinese students' English writing skills through SFL teaching. It relies on the examination of classroom teaching and quasi-experimental research strategies,

informal interviews, questionnaires and classroom observation and the students' exercises to achieve the objectives of the study. There are ethics requirements to ensure that no participants will suffer as a result of their participation. In order to guarantee the participants will not be hurt psychologically and the success of the research, the following measures have been taken before the research:

- The researcher received permission from the participants before involving them in the research and they were free to withdraw at any time as ethical research practice respects this right to discontinue.
- The participants volunteered to participate with full knowledge of the purposes and the procedures involved.
- The researcher maintained a visible process in classroom teaching and was open to suggestions from others.
- Codes were used to represent individuals to protect privacy. Individual data was quoted by referring to the participant's code such as "S1 (student 1)" or "T1 (teacher 1)".
- Proper classroom procedures were created to maintain confidentiality. Confidentiality is extremely important to ensure that responses to personal questions and scores on tests are confidential and anonymous so that others, apart from the researcher, will be unable to trace the identity of the individual (Burns, 2000).
- All the pre-writing and post-writing data, interviews and classroom observation data were securely kept at the Faculty of Education, University of Tasmania.

- Ethics application for the approval to conduct the research was sought from the Northern Tasmania Social Sciences Human Research Ethics Committee before the commencement of the research and the research has been approved before being conducted.

Another point worth mentioning is that the teacher takes the roles of both a SFL teacher and a researcher because of the special nature of the research situation. According to action research, the teacher is nominally somebody other than the researcher. However, the real situation is that the teachers (other than the researcher) in the English Department of Taiyuan Teachers College have no awareness of SFL. The research cannot be conducted if the researcher does not teach personally. On one hand, it might influence data collection and classroom observation and most importantly the interpretation of results. Ethically, in Chinese culture, the power relationship between teachers and students could interfere with the classroom in terms of domination and imposition for the sake of research. On the other hand, it was good for the researcher to be involved in the real teaching situation to get information or feedback directly from the participants. The teacher researcher has experienced the whole teaching process and reflected the whole teaching and learning process and can find out the problems in teaching personally. Although the students might feel uncomfortable when they make mistakes or have difficulties or problems during the learning process, the teacher researcher will try her best to understand the students' feelings and give them psychological comfort. In addition, the researcher is a teacher in the English Department and the students are quite familiar and comfortable with her. In order to get more information about the students including the control group students, the researcher interviewed their former teachers.

1.10. Summary of the thesis chapters

This thesis has seven chapters. The chapters are organised in a logical and consistent way that it strongly reflects the background, development and progress of this study.

Chapter 1 presents an overview of the whole dissertation which includes the background introduction in relation to the researcher's personal journey leading to this research; social and political context; and the theoretical basis of the research. The methodology, data collection, data analysis, reliability and validity are presented and discussed. The aims and objectives, significance, limitations and ethical issues of this research are also examined.

Chapter 2 reviews the literature and presents the current theories and studies on teaching English writing in Chinese context, SFL in China, SFL and teaching of English writing, the four grammatical features of SFL and their application in the teaching of writing.

Chapter 3 describes the details of the four SFL grammatical features of Theme and Rheme, lexical density, nominalisation and grammatical metaphor which are related to this study.

Chapter 4 presents the methodologies used in this study concerning research approaches, research methods, ethics of the research, participants, the design of the study, data gathering and analyses, the reliability, validity and triangulation and the limitations of the study.

Chapter 5 is the analysis of task-based data including the pre-teaching and post-teaching writing of both experimental and control groups. Data collected from the students' exercises of the experimental group is also analysed quantitatively and qualitatively on mutually inclusive basis.

Chapter 6 deals with the quantitative and qualitative analysis of non-task-based data including questionnaires, informal interviews and classroom observation. Chapter 5 and 6 also show how the data are used to achieve the objectives of the study.

Chapter 7 includes the researcher's reflection of the research aims and objectives, and the research journey. The findings, implications of the study on the teaching of the four grammatical features and new directions to the research are concluded.

1.11. Conclusion

In this chapter, an overview of the thesis is given which covers the researcher's personal journey to this research study, as well as the social, political and theoretical contexts of the research. The aims and objectives, significance, limitations and ethical issues of the research are also examined. This chapter also introduces the research methodologies which include research approaches used, data gathered, data analyses and reliability and validity of the research. The design of each chapter in the thesis is provided to give readers general information about this dissertation.

CHAPTER 2. LITERATURE REVIEW

2.1. Introduction

Writing is a way people express their thoughts and feelings. English with its unique status as a worldwide language has become the common language in a global context. As foreign language learners, using the target language to express thoughts is one of the most important ways to communicate with people around the world. In developing the writing skills of Chinese learners of English, it is important to learn how native speakers express their thoughts in writing.

English writing, as one of the four skills (listening, speaking, reading and writing) in English teaching and learning, for many years has been a great challenge for Chinese learners of English, though research on the teaching and learning of English writing has received great attention in education. The focus of most research is on vocabulary, sentence analysis, grammatical analysis and genres. From a Chinese perspective, finding effective ways to develop the English writing skills of Chinese learners is a crucial task for English language teachers in the current TESOL (Teaching English to Speakers of Other Languages) context.

Systemic Functional Linguistics (SFL) pioneered by Halliday is concerned not only with grammatical structures of language, but also with the meaning and function of language and how language is used in various social contexts. This study aims at developing the writing skills of Chinese learners of English through teaching SFL grammatical features. In pursuit of this aim, the literature review in this chapter firstly gives an overview of the literature in relation to the teaching of English writing in Chinese context, studies on SFL theory, its application, theoretical development as well as studies on SFL that are used to

analyse different languages. The literature review then examines SFL in China and finally the use of the four grammatical features of SFL in writing skill development.

2.2. Teaching of English writing in Chinese context

In China, English is one of the three major subjects (Chinese, Mathematics and English) in primary and secondary schools and a basic requirement for enrolling in universities, particularly at the postgraduate level. Writing is one of the four language abilities in language teaching and learning, and developing students' writing skills has received great attention in English teaching in both secondary schools and universities in China. However, there are still issues and problems facing the teachers and students.

According to Zou (2000), 75% of the university students thought that their English reading ability had been greatly improved in comparison to listening. However their speaking skills still needed improvement. Cai (2002) points out that university students' writing ability had stagnated. He further mentions that the students' motive for learning English has been strengthened and their aims of English learning are very clear, but most of them are not happy with their oral and writing abilities. Despite the long period of time devoted to learning English, the results are very disappointing to students (Cai, 2003). In regard to theoretical awareness of the teaching of English as a Foreign Language (EFL) writing, Wu and Zhang (2000) state that EFL teachers in China lack theoretical study of the teaching and learning of EFL writing. You (2004) reveals that instructions on teaching English writing in China are controlled by the authority of a nationally unified syllabus and the College English Test (CET) examination system. The Chinese College English Syllabus (CCES) and the CET syllabus value highly linguistic forms instead of the development of the students' creative thought. Gao (2007) further reveals that the desire for high

CET pass rates amongst universities places English teachers in a dilemma. Under immense pressure, English teachers must focus on teaching formal language forms and test-oriented skills rather than helping students develop their creative thinking and language skills for communicative purposes.

These factors indicate that college English teaching has been powerfully guided by the Chinese College English Syllabus and the College English Test (Gao 2007). Syllabus which focus on linguistic correctness rather than the students' creative thought. Accordingly, teaching of English writing is entirely test-oriented, with the main aim of developing the students' writing skills for passing a narrow-in-scope writing test. The teaching of English writing deals with topic areas which are very artificial and irrelevant to the language in context. For English-major students, the teaching of English writing is also narrow in its focus on teaching different genres, choosing topics, collecting reference materials and analysing the construction of the students' graduation papers. As a result, the students "learn about" the structure of academic writing rather than personally and meaningfully participating in the writing process themselves.

2.2.1. Characteristics of Chinese tertiary students' writing

In China, the teaching of English writing has not changed for many years and great improvement is required to meet the writing needs of Chinese tertiary students. The writing requirements of CCES and CET are much lower than the writing requirements of the International English Language Testing System (IELTS) and the Test of English as a Foreign Language (TOEFL).

- *Chinese students' writing based on given topics and outlines.*

Writing based on the outline instructions given by teachers is not very productive for developing the students' writing skills (Cai, 2002). According to Zhang (1995), students are not given the opportunities to express their own ideas or thought. Chinese EFL students' writing is poor in terms of content and meaning making. According to a survey, 51% of Chinese EFL students' writing lacks detail. Moreover, Chinese students have two common problems in writing: "they are worried that they have nothing to say; but if they have something to say, they are worried that what they have said will not be understood" (Covey, 1983, p. 5). The Grade 4 College English Test (CET) Syllabus requires the students to write a short passage with 120 words in 30 minutes and 150 words for Grade 6 CET. In TOFEL (TOFEL, 2007), the students need to finish a 300 words passage in 30 minutes and in IELTS (IELTS, 2007), the students must finish two tasks of 400 words each in 60 minutes. As such, Chinese EFL students' writing ability is much below international standards.

- *Chinese EFL students' writing influenced by Chinese culture*

Li (1996) mentions that Chinese and British people have different experiences in culture and history, and consequently they have different thoughts. Kaplan (1966) analyses the differences between English written discourse structure and the Oriental written discourse structure. He believes that the textual development of English is broadly characterised by linearity, in which the structure demands for a clear Introduction, Development, and Conclusion, logically progressing from the top to the bottom of a document in a vertical manner. Whereas Chinese (the oriental) style supposedly is characterised by avoiding a direct delineation of thesis (i.e., statement of topic) in the opening sections of text. The thesis may be mentioned towards the middle of the text,

towards the end, or indeed perhaps never clearly stated at all. It is left to the reader to assemble the main thrust of the argument, based upon the clauses in the text. Kaplan (1966) calls such a style an “approach by indirection”. Discourse development follows a pattern of “turning and turning in a widening gyre”. The loops revolve around the topic and view it from a variety of positions, but never address it directly. Scollon (1991) supports Kaplan’s (1966) hypothesis of indirectness in Chinese writing. Scollon attributes the indirectness in Chinese writing to a different view of self in Chinese culture from the Western image of “selfness”. For instance, in Chinese narrative, the writer always acts as a storyteller, whilst the writer in English may be one of the characters or an outsider. Furthermore, Hinds (1990) claims that Chinese favours a delayed introduction of purpose and they lack sensitivity to the different expectations of readers and writers. English readers expect and require landmarks of coherence and unity as they read. The writer needs to provide transitional statements or elaboration to fill the information gap. On the contrary, in Chinese writing, detailed and specific information is not required since more room is preferred to be left for readers to interpret the text. Chinese EFL writing relies more on subordinate conjunctions.

In summary, Chinese EFL students’ writing is mainly influenced by a restricted way of writing development. In addition, the Chinese and English cultural differences also play a part in the text construction of Chinese EFL students when they are required to write an English text.

2.2.2. Main theories used in the teaching of English writing in China

Foreign language teaching has been included in China’s curriculum reform. Some Western and Chinese theoretical concepts and principles have been used in developing the writing skills of Chinese learners of English and the theoretical perspectives have been useful in promoting the teaching of English

writing in China. Some teaching approaches are still used in the teaching of English writing in universities.

- ***Genre and process writing***

Shaw and Liu (1998), whilst not discussing teaching approach explicitly, demonstrate that students attending writing instruction courses do learn to make the language of their texts closer to the conventional language of (one style of) academic writing. Freedman (1993) supports the explicit teaching of “learning how to write by writing”. The emphasis on writing instruction focuses on the process of creating writing rather than the end product. The basic premise of process writing is that all children, regardless of age, can write. The initial focus is on creating quality content and learning the genres of writing (Tompkins, 1990). The process approach includes planning, drafting, revising, and editing. However, in terms of process writing, there are some issues about the teaching of rules. Delpit (1995) argues that what is important is not voice in itself but teaching the discourse of power. She prefers explicit instruction on the rules and standards that are valued in the dominant culture. Hasan and Williams (1996) mention that genre approach, which is popular in England and Australia, focuses on deconstructing dominant genres, analysing them from a linguistic point of view, and reproducing them. Through overt instruction, students learn to identify specific text types (narrative, factual, procedural, and persuasive), analyse their structural and linguistic features, and generate their own texts that conform to the conventions of each genre (Spiegel & Sunderland, 1999).

What the literature review reveals above is that process writing does not take genres into consideration and that the teaching of writing should also teach the discourse of power.

- *Genre-based approach*

Developing genre awareness has been recognised in some recent approaches to teaching English writing to native and non-native language learners. Genre theory studies issues on how to recognise and understand various types of texts and what they accomplish in different human activities based on the production and use of texts.

According to Freeman (1994), two distinct approaches to genre have developed in the English-speaking world: one largely in North America, the other, largely in Australia and referred to as the 'Sydney School', because its leading proponents were students of M. A. K. Halliday at the University of Sydney. Both approaches, from Freeman's viewpoint, are socially oriented, but they have taken different course due to differences in the political environment of the different countries, and of concomitant responses by the educational system within those countries, but also because of the different scholarly traditions within which each approach has been framed. The Sydney School genre proponents introduced a carefully developed and sequenced educational program. They began by identifying those genres that confer power and they explicated the features of these genres using the Hallidayan socially-based system of textual analysis. On that basis, they devised programs in which teachers were expected to explicate the features of these genres to their pupils, beginning in the earliest years of schooling.

The Sydney School treats genres as fixed and classifiable into neat and mutually exclusive categories and subcategories. For example, exposition, argument, description, and narratives are treated as the large categories, with sub-types such as business letter and laboratory report. However, Halliday's functional approach concerns linking form, function, and social context with each other. Martin (1993) defines genre as a goal-oriented and staged social

process. Richardson (1994) defines genres as social processes because members of cultures interact to achieve them; they are goal-oriented because they have evolved to achieve things; and staged because meanings are made in steps and it usually takes writers more than one step to reach their goals.

Wennerstrom (2003) provides a theoretical background for genre and discourse analysis in relation to SFL writing and she proposes that discourse analysis combines several dimensions of language use including lexical, grammatical, rhetorical, social and cultural contexts as it examines naturally occurring language within the context of use. Wennerstrom (2003) proceeds to elaborate the importance of genre in society, education, and in ESL writing. Genre's role in society involves shaping linguistic messages to achieve communicative purposes. Using genres in education and more specifically in ESL writing serves to enable students to learn how to structure their discourse according to the patterns used in different communicative settings and for different communicative purposes. In regard to communicative purposes, Paltridge (2004) claims that teaching of particular genres is needed for later social communicative success. Reppen (2002) mentions that students could better understand how to make a piece of writing more effective and appropriate to the communicative purpose with direct instruction of particular text features. Writing classes might need to help students understand the social functions or actions of genres and the contexts in which these genres are used (Bazerman, 1988; Freedman & Medway, 1994). In terms of teaching of genre, classroom instruction that addresses multiple genres would support students' needs in their various academic pursuits and workplaces. As part of this instructional change, university writing teachers might consider initiating students into the academic discourse community (Bizzell, 1982), and teach the discourse conventions of school and workplace genres as a tool for empowering students with linguistic resources for social success (Kress, 1993; Martin, 1993).

However, some arguments have been raised. Freedman (1993) argues that teaching students genres would degenerate the teaching of writing into teaching arbitrary models and textual organisation with little connection to a student's learning purposes. Paltridge (2001) states that genre knowledge includes both textual knowledge and social, cultural knowledge and therefore, identification of the exact knowledge is a difficult task. Teachers, especially non-native speakers in EFL contexts, might lack the knowledge of some genres themselves. In the process of modelling the given text, more arguments are about the passive performance of the learners. The negative aspect of genre approaches is that they undervalue the skills needed to produce a text, and see the learners as largely passive (Badger & White, 2000). Swales (2000) also argues that a genre approach over-focuses on the reader whilst paying less attention to the learner's expression.

2.3. Systemic Functional Linguistics and teaching of writing

2.3.1. Systemic Functional Linguistics

Systemic Functional Linguistics (SFL) developed by Halliday and his colleagues is a theory of language which centres on the notion of language function and semantics which are the basis of human language and communicative activities. SFL places the function of the language - what language does, and how it does it - as central when it analyses the syntactic structure of the language. SFL pays attention to social context and looks at how language both acts upon, and is constrained and influenced by this social context, whilst the structural approaches place the elements of language and their combinations as central.

A key concept in Halliday's approach is the "context of situation" and it obtains "through a systemic relationship between the social environment on the

one hand and the functional organisation of language on the other” (Halliday & Hasan, 1985, p. 11). The central notion of language function refers to its “stratification”. It can be analysed into four strata: Context, Semantics, Lexicogrammar and Phonology-Graphology.

Context concerns the Field (what is going on or the nature of the social interaction taking place), Tenor (the social roles and relationships between the participants), the Mode (aspects of the channel of communication, e.g. monological/dialogic, spoken/written, positive/negative visual-contact, etc.).

Systemic semantics includes “pragmatics”. Semantics is divided into three components:

- Ideational semantics concerns the propositional content;
- Interpersonal semantics concerns speech-function, exchange structure, expression of attitude, etc.; and
- Textual semantics concerns how the text is structured as a message, e.g. Theme-structure, given/new, rhetorical structure etc.

Lexical-Grammar concerns the syntactic organisation of words into utterances. Systemic Functional Linguistics developed by Halliday is a theory which studies how language is used to express thought, how people use language to make meanings to enact social relations and to create certain types of texts to fit into the society.

Linguists and rhetoricians have developed approaches to the study of texts, moving beyond the sentences level toward descriptions of the structures underlying a text as a whole (Halliday, 1977a; 1976; Kinneavy, 1971). Halliday’s (Halliday, 1977a; Halliday & Hasan, 1976) discussions of the uses of language focus attention on language at the level of text. The importance of

text as a formal construct is that it moves us immediately beyond the level of the individual sentence and asks us to examine the characteristics of larger stretches of discourse.

The concept 'text' in Systemic Functional Linguistics signals an important shift away from the traditional focus on sentence as the most crucial linguistic unit. The focus now is on text, which could be a word, a phrase, a sentence or a combination of any of these. The main point is that text is a meaningful unit, which is not syntactically determined. Thus, according to Lee (2005), text is not confined to a written unit but anything can be a text, depending on situation, location and circumstance. In other words, it remains problematical to think about texts as already preconstituted, already formed and present. Text designates language in use in a real social context.

Analysing texts enables speakers and writers to increase their understanding of the linguistic system and to produce and process coherent meaning. Compared with the other grammars, Functional Grammar puts greater stress on meaning, function, cultural context, and the analysis of text rather than test sentences.

2.3.2. SFL in the teaching of writing

A functional approach goes beyond analysis of students' errors to look at the lexicogrammatical choices the students make and how they change over time (Colombi, 2002). The importance of functional grammar in understanding language is that it is a meaning making resource. Genre analysis (Christie & Martin, 1997; Eggins & Slade, 1997; Martin, 1989, 1992; Paltridge, 1994) and the approaches to identify genre and register characteristics help second language learners understand English in the professional and academic environment (Jones, Gollin, Drury, & Economou, 1989; Martin, 1993, 1996; Ventola & Mauranen, 1991). Martin (1997) states that the genre approach involves a close analysis of texts using SFL and this type of linguistics "is

centrally concerned with showing how the organisation of language is related to its use” thus giving cultural context. Martin and Swales (Martin, 1985; Swales, 1988) are concerned with discourse analysis and genre.

Amongst many writing studies, studies in written language find that written language is relatively more complex than spoken language (Biber, 1988; Biber, Johansson, Leech, Conrad, & Finegan, 1999; Chafe, 1982; Chafe & Danielewicz, 1987; Cook, 1997; Halliday, 1989a). Written language tends to condense and compact information in the sentences, such as by the use of grammatical metaphor and nominalisation. In written language, we tend to use relatively few clauses per sentence, packing more information into each clause through nominalisation and grammatical metaphor (Eggins, 1994). Scientific writing contains unique linguistics features that construe special realms of scientific knowledge, values, and beliefs. In science, for example, it is crucial to understand the functionality of these linguistic features to the development of literacy. Significant SFL studies on this unique linguistics features have contributed to our understanding of scientific writing (Halliday & Martin, 1993; Martin & Veel, 1998; Schleppegrell, 2004). Grammatical metaphor is a resource language uses to condense information by expressing concepts in an incongruent form. The use of grammatical metaphor is considered as essential characteristics of scientific and academic language (Halliday, 1998b; Veel, 1998). One of the distinguishing features of scientific writing is that it has a high density of information. Lexical density is the density of information in any passage of text, according to how tightly the lexical items have been packed into the grammatical structure. It can be measured as the number of lexical words per clause (Halliday & Martin, 1993). The reconstruction of grammar, from verbs or adjectives into nouns, is referred to as “nominalisation” (Halliday, 1998b). Nominalisation phrases “abstract away from immediate, lived experiences, to build instead truths, abstractions, generalisations, and arguments,” so that they can further participate in the process (Christie, 2001, p. 66). Nominalisation allows the author to create

technical terms or new entities, to establish cause-and-effect relationships between disparate phenomena, and to synthesise and systematise previously stated information (Veel, 1997, p. 184). In addition, without an acute understanding of the role nominalisation plays in fashioning scientific texts, students will not be able to present information and develop argument effectively in their own writing (Schleppegrell, 2004). Nouns can synthesise or abstract previously presented information into entities, which can then become grammatical participants in subsequent discussion. As such, nominalisation is a particularly effective tool for “creating a flow of discourse” in science (Halliday, 1998b, p. 202).

SFL helps teachers to relate grammatical structures to meaning rather than to forms. Fang (2004) describes some of the key features of scientific writing and argues for greater attention to the specialised language in science writing in teaching and learning.

There is widespread consensus within the field of English for speakers of other languages (ESOL) on the teaching of writing (Auerbach, 1999):

1. that a focus on meaning rather than form (grammatical correctness) encourages writing development;
2. that instruction should stress writing for real reasons, to real audiences in order to promote authentic communication;
3. that writing should be contextualised and that content should be meaningful and relevant to learners;
4. that learners need some degree of overt instruction (which includes talk about writing, substantive and specific feedback) and multiple opportunities for revision;

5. that social and cultural variation in writing practices and genres needs to be taken into account; and
6. that all writing pedagogy reflects a stance about the learner in relation to the social order.

From this point of view, the Systemic Functional Linguistics theories from Halliday and other linguists build up descriptions of how the language works and how people use language in social communication. It is functional and semantic rather than formal and syntactic in orientation. It takes the text rather than the sentence as its object, and defines its scope by reference to usage rather than grammaticality. The theory is very important for Chinese learners of English to understand English language and to use it to express their thoughts effectively.

2.4. SFL in China

With the increasing popularity of Hallidayan linguistics around the world, research on Hallidayan linguistics has gained attention amongst scholars in China. The trends of and interests in SFL research in China can be seen from the aspects discussed below.

- ***Developmental stages***

The following developmental stages have emerged:

- from the early 1980s to the late 1980s: introducing Systemic Functional theories;
- from the late 1980s to the mid-1990s: introducing and evaluating Systemic Functional theories;

- from the mid-1990s to present: introducing, evaluating and modifying Systemic Functional theories (Huang, 2002b), translation studies, SFL in Chinese analysis and SFL in teaching English as a foreign language.

- *Noticeable events*

Since 1989, national conferences on SFL have been held every two years in China, and in addition to this, Chinese SFL scholars have regularly attended international SFL conferences. Numerous papers were presented at conferences or published in conference proceedings or SFL journals both domestically and abroad (Hu, 1984; Huang, 1996; D. L. Zhang, 1991; Zhu, 1996).

In 1995, the China Functional Linguistics Association was founded, and the research group of Functional Linguistics at Zhongshan University has set up a website (www.LanguageRA.com), entitled “Language: Research and Application”.

Influential international systemicists (Fries, 2002; Halliday, 1993, 2002a, 2002b; Matthiessen, 2002a, 2002b) have had their papers published in Chinese conference collections (Huang, 2002a; Huang & Wang, 2002; Zhu, 1993). In addition, some of them (e.g. Halliday, Hasan, Fries, Fawcett, Berry, Ventola, Martin, Ghadessy) have not only attended systemic conferences in China but also taught short-term intensive courses at Chinese universities (Huang, 2002b).

Many universities in China offer courses on SFL in their MA and PhD programs and books on Hallidayan linguistics written by Chinese scholars are published. Halliday himself speaks highly of the first book (Hu, Zhu, & Zhang, 1989), saying that the writers were not consumers but producers (Z. P. Yu, 1997, pp. 19-22), and referring to it as “an original work” (Halliday, 1994b, p. 4508) and “admirable” (Halliday, 2000, pp. 2-3). Cheng’s (1994) book, though it is not as directly related to Halliday (1985a) as Hu, Zhu and Zhang’s (Hu,

Zhu, & Zhang, 1989), is another introduction to Systemic Functional Linguistics, which has also contributed to the popularisation and development of Hallidayan linguistics theory in China (Huang, 2002b).

Books written by Bloor and Bloor (1995; 2001), Halliday (1978; 1994b; 2000; 2001), Halliday and Hasan (1976), Thompson (1996; 2000) and others have been re-published by The Foreign Language Teaching and Research Press in Beijing. As a result more and more Chinese scholars are finding the study of SFL both interesting and rewarding, since SFL considers more about function and semantics of the human language and its analysis is on how language functions in upon in certain social context rather than the decontextualised syntax of Chomskyan linguistics, and similar approaches (Huang, 2002b).

- ***Research themes***

Chinese Hallidayan linguists mostly focus their research on contrastive studies of English and Chinese in the areas of the metafunctions of language, text analysis, grammatical metaphor (Halliday, 1994a) and the lexicogrammatical issues (Halliday, 1985b, 1994a). In the literature area, their attention is on “cohesion” and “Theme” which are very important concepts in Hallidayan linguistics (Huang, 2002a). Successful translation studies of English and Chinese (Lu & Wei, 1992, 1996, 2001) using SFL theory and analyses as well as the descriptions of the Chinese language within the Hallidayan framework ((Hu, 1990; Hu & Fang, 1997; Huang, 2002a, 2002b, 2002c; Huang & Wang, 2002; Ren, 1995; W. S. Yu, Li, & Peng, 1998; Zhou, 1997b; Zhu, 1993) are also achievements in the research area of SFL (Huang, 2002b). Recently, Zhang (2006) conducts studies in the area of the application of SFL to foreign language teaching. In addition, Ye and Wang (2006) attempt to apply thematic structure theory in translation to keep the thematic structure of the source text

in the target text and make appropriate alternations arising from the differences between languages.

- ***Limitations***

Chinese Hallidayan linguists seem to be more interested in the descriptive applications of the SFL theory and research papers are more on the description of English and Chinese rather than on the teaching of English or Chinese by using SFL (Hu, 1990; Hu & Fang, 1997; Huang, 2002c; Huang & Wang, 2002; Huang & Zhang, 2002; Lu & Wei, 1992, 1996, 2001; Ren, 1995; Ren, Guthrie, & Fong, 2001; W. S. Yu, Li, & Peng, 1998; Zhu, 1993, 2001). However, in Australia, many systemicists have made good use of Hallidayan linguistics in the educational field. In addition, there are also relatively few studies on the generative aspect of Hallidayan linguistics in China. Scholars in Australia (e.g. Matthiessen, Wu Changzhong), Britain (e.g. Fawcett, Gordon Tucker), America (e.g. William Mann, John Bateman), Hong Kong (e.g. Jonathan Webster) and Japan (e.g. Tadashi Kumano, Takenobu Tokunaga, Kentaro Inui and Hozumi Tanaka) have been working on computational issues within the Hallidayan framework, but few mainland Chinese functional scholars have done work on this aspect. Up to now, there have been few studies on issues concerning intonation and rhythm (i.e., “beside the clause”, see Halliday 1985a, 1994a). Nevertheless, great advances have been made in the field of Hallidayan linguistics during the last two decades (Huang, 2002b).

2.5. The four grammatical features of SFL

The four SFL grammatical features covered in this study are Theme and Rheme, lexical density, nominalisation and grammatical metaphor which are the four main features mentioned by Halliday and other scholars in SFL. Theme and Rheme are concerned with the flow of information through the text.

Lexical density is the the degree to which information is compacted in a text. Nominalisation is the main resource of grammatical metaphor which is the most important representation of scientific and academic writing. The review of the literature below examines these four features from the functional perspectives.

- *Theme*

The system of Theme belongs to the textual metafunction of language. It is concerned with the organisation of information within individual clauses and, through this, with the organisation of the larger text (Martin, Matthiessen, & Painter, 1997). The system of Theme should be examined when we explore how the clause is organised to express textual meanings. The thematic systems are the systems of the clause, and represent the speaker's organisation of the clause as a message. The basic structure through which this organisation is realised is that of Theme and Rheme, which in return is expressed through the order of the elements (Halliday, 1977b). Theme functions as the "starting point for the message" (Halliday, 1985b, p. 39), the element which the clause is going to be "about" and it thus has a crucial effect in orienting listeners and readers. The Theme is the element which serves as the point of departure of the message; it is that with which the clause is concerned

Hasan and Fries (1995) further mention that within a system-functional approach, there are three distinct subcategories of Theme that can be found simultaneously within the same clause: Textual Theme, Interpersonal Theme and Topical Theme. Multiple Themes show various combinations of elements preceding the experiential element and thematic organisation of the clauses is the most significant factor in the development of the text.

Looking at Theme from a broader perspective, Theme choices can work together through a text to signal its underlying coherence. Thompson (1996, p. 141) identifies four main functions of Theme:

- Signalling the maintenance or progression of “what the text is about” at that point. Maintenance is done by keeping to the same Theme as the preceding clause and progression is often done by selecting a constituent from the preceding Rheme.
- Specifying or changing the framework for the interpretation of the following clause or clauses (the wording here is taken from Fries (1995b)).
- Signalling the boundaries of sections in the text and this is often done by changing from one type of Theme choice to another.
- Signalling what the speaker thinks is a viable/useful/important starting-point.

In long educational texts, such as science and geography textbooks, elaborative structures can be signalled by the writer early in a section or chapter. These structures then serve as a way of introducing new information which can be taken up as Theme of subsequent clauses (Bloor & Bloor, 2004). The writer must find syntactic and lexical means to specify referents, indicate semantic and pragmatic connections between propositions, and give thematic cohesion to the discourse (Tannen, 1984). Discourse analysts concentrate on not only thematising in clauses, but also the sequencing choices of clauses within sentences, sentences within paragraphs and discourse-related type. Hasan and Fries (1995) present more investigations of Theme: “the nature of textual meanings can be appreciated only when enough of the textual environment is taken into account to demonstrate the contribution, if any, that Theme might make to textual organisation”. As far as the thematic progression presented above is concerned, thematic progression is quite useful in developing thematic

cohesion in writing. Thompson (1996) states that looking closely at children's ability to control thematic development of texts in various genres can be very useful for organising discussion and joint construction activities to help learners make choices about various modes of text development.

Themes can be identified as the linguistic elements "up to and concluding the first experiential element at the beginning of a clause" (Schleppegrell, 2004, p. 68). Themes in scientific English are most often realised by nominal groups, many lengthy, and others short. These nouns help establish semantic links amongst clauses and contribute to the overall discursive flow in the text (Eggins, 1994; Schleppegrell, 2001). However, Davies (1988), who has questions on Subject and Unmarked Theme, works with a corpus of academic texts arguing that subject should not be merely seen as the unmarked choice of Theme, but as an obligatory element in Theme. Marked theme is the expected place of an item in a sentence such as the subject of a sentence whereas unmarked theme is unusual position of an item in a sentence.

Regarding the studies on Theme above, a clause is made up of various structures which give the clause its character as a message. Theme awareness helps teachers and students consider different ways of organising information and text.

- *Lexical density*

Halliday and Martin (1993) define lexical density as a measure of density of information in any passage of text, according to how tightly the lexical items (content words) have been packed into the grammatical structure. Lexical items are the major content words, which fall into four grammatical categories: nouns, adjectives, adverbs and main verbs. Grammatical items (or functional words) serve to express relations between content words and include: auxiliary verbs, modals, pronouns, prepositions, determiners and conjunctions (Lyons, 1968;

Palmer, 1976; Robins, 1964). Lexical density can be calculated by expressing the number of content carrying words in a text/sentence as a proportion of all words in the text/sentence.

In informal spoken language the lexical density tends to be low and about two lexical words per clause is quite typical. When the language is more planned and more formal, the lexical density is higher. Written language tends to be somewhat denser than spoken language, often having around four to six lexical words per clause (Halliday & Martin, 1993). In scientific writing, the lexical density may go considerably higher (Halliday & Martin, 1993). “The employment of simple sentences should contribute to a higher lexical density, given the resultant existence of fewer clauses per sentence”(Halliday, 1987, p. 60).

- ***Nominalisation***

Nominalisation is the use of a nominal form to express a process meaning (Thompson, 1996). Nominalisation is a process whereby a verb or an adjective is converted into a noun. Whilst the verb becomes the head noun in the nominalised noun phrase, the various other elements of the erstwhile clause – subject, object, indirect object, adverbs or verbal complements – become various noun modifiers (Givón, 1993, pp. 287-288). Nominalisation can be extensively modified. By associating multiple modifiers with a nominalisation, writers are able to produce extremely fine and precise delineations of meaning. With these meanings, they can build up elaborate taxonomies of information (Halliday, 1998b, p. 179).

Nominalisation helps to construct texts economically. One of these has to do with the progression from one sentence to subsequent ones. What writers sometimes do the first time they present information about a process is to use a clause. If they wish to bring that information back in a later sentence, they then

typically use a nominalisation. Usually they express that nominalisation early, in the subject position, where it can serve as Theme for that sentence (Vande Kopple, 1991). Nominalisation helps the writers avoid having to repeat the whole clauses or large parts of the clauses if they wish to carry information about processes from one sentence to a subsequent one. However, Lee (1960) argues that due to the influential analysis of nominalisation in English, nominalisations are still basically regarded as clause-like constructions used in nominal units in an unfathomable way. The absence of a coherent theoretical perspective on the processes of nominalisation has led to descriptive fragmentation.

Nominalisation has been known as “the single most powerful resource for creating grammatical metaphor” (Halliday & Matthiessen, 2004, p. 657). There are two perspectives on metaphor where it concerns the meaning of nominalisation: non-literal/metaphorical and literal/congruent meaning (Halliday, 1994a, p. 342). Nominalisation is also one of the most important resources of producing lexical density which distinguishes spoken and written language.

- ***Grammatical metaphor***

Halliday (1985b) defines grammatical metaphor as a substitution of one grammatical class, or one grammatical structure, by another, for example, *his departure* instead of *he departed*. He uses the term grammatical metaphor to refer to the meaning transference from congruent to metaphorical in grammar. Grammatical metaphor, especially in the form of nominalised processes, has been of particular importance in the evolution of scientific writing, and most notably that of scientific research articles. The form of grammatical metaphor which has received the most attention is the nominalisation of processes, and

indeed in some treatments it is the only form discussed (Bloor & Bloor, 1995; Eggins, 1994).

Grammatical metaphor studies have been very popular since Halliday introduced grammatical metaphor as a concept in the 1980s.

In the acquisition of grammatical metaphor or metaphor development, Clare Painter (2003) had a longitudinal study of children's acquisition of grammatical metaphor. The examples in her study show that children at very early stages (preschool) already explore the meaning potential of a limited but existing class of grammatical metaphors. Jane Torr and Alyson Simpson (2003) also conducted a longitudinal study on children's literacy development by examining children's expressions with grammatical metaphors used by them in their daily exchanges with caregivers. The result shows that if children's ability to employ these linguistic resources is fostered, they build on a path to a successful academic development.

Randalm Holme (2003) conducts the comparison between Systemic Functional Linguistics and cognitivism. It is suggested that the SFL notion of congruency can be considered as a metalinguistic device to explain metaphorical meaning and not as an example of a natural use of language. Moreover, the author proposes that SFL can cover some weaknesses of cognitive analysis. SFL concepts of genre and register can show how context may affect the preference of one metaphor over another. Simon-Vandenberg, Taverniers and Ravelli (2003) represent a valuable contribution to the advancement of the research in grammatical metaphor and a comprehensive overview of the field.

In summary, nominalisation is the main resource of grammatical metaphor which characterises scientific and academic writing. The features of ambiguity and vagueness are two main types of nominalisation and the application of

these features is useful in teaching second language and developing children's literacy.

2.6. The four SFL grammatical features in the teaching of writing

SFL has been of practical use in teaching since the 1980s. They provide ways of describing real uses of language for the purpose of social communication. The development of functional grammar provides teachers with an awareness of how meanings are made in texts. SFL enables us to relate grammatical structure to ways in which people mean when they use language in context and SFL also relates grammatical structure to social structure through descriptions of types of situation in a culture and these principles have gradually attracted the attention of the language teachers. As noted earlier, the four grammatical features of Theme and Rheme, lexical density, nominalisation and grammatical metaphor are useful in developing writing skills, which have attracted great attention of researchers in the linguistic and educational areas.

2.6.1. The SFL grammatical feature of Theme and the teaching of writing

Theme has a significant role in the construction of a text. Frances Christie (1989) develops a writing curriculum genre focusing on Theme in the discourse and examining transitivity processes as well as lexical coherence and reference. This is one immediate measure of the value of Halliday's functional grammar. A focus on Theme, as it is realised in the text, will take a significant part of the way into understanding how the text is constructed, and how the meanings in it are made. In the light of examining one of the children's texts Christie reviews the responsibility of developing educational theory which has been the major trends for the purpose of establishing a context within which to

consider what actually happens in the name of language education in many contemporary schools.

The SFL grammatical feature of Theme and Rheme in English, which provides very important cohesive element at discourse level, has been widely studied over the last few years (Fries, 1981, 1992, 1994, 1995b; Martin, 1992, 1995). Theme plays a very important role in the structuring of discourse and should be taken into account by teachers of L2 writing (Belmonte & McCabe-Hidalgo, 1998).

It is very common in academic writing that what is presented at the end of one clause then serves as the beginning the next, as Theme allows the writer to relate the sentence logically with the previous sentence. Information introduced in the Rheme (last part of clause) is picked up and recast as the Theme of the next clause (Leonard & Hukari, 2005). Leonard and Hukari (2005) also mention that in the development of students' writing skills, Theme and Rheme can be key in maintaining coherence in textual organisation. Wang (2007) explores the insights concerning the relationship between Theme and Rheme to improve cohesion in academic texts using university students' writing to demonstrate the application of the approach to find ways to develop students' textual cohesion. In addition to this, Len Unsworth, Astorga and Paul (2002) explore the development of adult second language writing focusing on systemic functional analyses. They mention that in written genres, given or expected or familiar information is usually located in Theme position functioning as the point of departure for the reader, and new information is located at the end of the clause in the Rheme. The thematic principle also applies across clauses in a sentence including subordinate clauses. Belmonte and McCabe-Hidalgo (1998) attempt to prove that that Theme and Rheme can be very helpful as a tool of instruction for the teacher to evaluate L2 writing at the level of the discourse by analysing 25 students' compositions written by

Spanish native speakers learning English as a second language in terms of their thematic selection and progression.

In terms of thematic progression, Downing (2001) tests the applicability of Danes' (1974) thematic progression types in the analysis of certain linguistics choices in texts. He finds that Danes' model appears to be fully applicable in helping to reveal the internal organisation of the text. An awareness of the types of thematic progression as expounded by Danes also raises interesting questions for language teaching pedagogy.

2.6.2. The SFL grammatical feature of lexical density and the teaching of writing

Lexical density is the one of the most important functional tools to examine how densely a text is packed. Angela Loo (2003) explores the expository writing of the three groups of students from Singaporean English speaking background, Singaporean Chinese-speaking background and students from the Republic of China focusing on the comparison of lexical density, grammatical intricacy with nominalisation of the writing produced by the different groups of students. The results were that Singaporean English speaking students tended to produce sentences which were more "lexically dense" and highly nominalised. The pedagogical implications are that both teachers and students should be made aware of features such as the power of nominalisation and lexical density in expository essays.

Zora and John-Lewis (1989) examine lexical density in interviews and conversation by analysing students' language use and find that the lexical density was different in the two situations for graduate students, with lexical density higher for the interview. Wang (2007) presents a study which incorporated the four grammatical concepts of Theme and Rheme, lexical density, nominalisation and grammatical metaphor in Halliday's Functional

Grammar in the teaching of writing to tertiary students. The study shows that teaching these four concepts enhances students' awareness of English grammatical complexity and their writing development. Shang (2007) examines the overall effect of using email on the improvement of writing performance in aspects of syntactic complexity, grammatical accuracy and lexical density, as well as investigates the relation between the number of email exchanges and writing performance. The major finding demonstrates that students improved on syntactic complexity and grammatical accuracy; however an increase in lexical density was not observed in this study.

2.6.3. The SFL grammatical feature of nominalisation and the teaching of writing

Geoff Williams (1994) and Hinkel (2002b) find in their studies that the Vietnamese and Indonesian writers used nominalisations at significantly lower rates than native speaking writers. This type of evidence seems to suggest that non-native-speaking students from certain language backgrounds may need to learn how to use the structure more frequently in appropriate contexts if their goal is to produce native-like academic prose. In Chinese, nominalisation is a syntactic process where the morphology of the lexical items involved are not affected, whereas in English both syntactic and morphological adjustments are not required (Givón, 1993, p. 288; Hinkel, 2002b, p. 94). Hinkel (2002b) claims that verbs and adjectives are nominalised only in indirect and non-specific discourse. Williams (1986) presents that teachers tend to judge essays that employ nominalisations as more sophisticated and rate them more positively than those that employ a reader-friendly verbal style. The phenomenon presents an interesting dilemma for writing teachers in that if their students heed their prescriptive advice and write in a verbal style, their essays gain clarity, but their marks suffer. On the other hand, if the students forsake the prescriptive advice and employ nominalisations, they get better

marks, but “they will write in a style that we (writing teachers) all say we condemn for its lack of grace and vigour” (J. Williams, 1986, p. 179).

According to this dilemma, it seems practical and prudent to teach nominalisation in an advanced academic ESL context, since students might have an option of choosing a style of discourse that best suit their purpose.

However, nominalisation can create problems for readers, because it tends to neutralise or obscure meanings and construct an ideology that is often not transparent to readers. Students who are not familiar with this way of meaning making and constructing text often fail to identify the precise referents of nominalised phrases and get frustrated with the ambiguity that nominalisation engenders. Moreover, without an acute understanding of the role nominalisation plays in fashioning scientific texts, students will not be able to present information and develop argument effectively in their own writing (Schleppegrell, 2004).

Understanding the grammatical forms of written English and how these are characteristically deployed in the genres of school subject areas is a crucial resource for enhancing students’ comprehension and composition of the distinctive discourse forms of different school subject areas (Unsworth, 2001). In sequential science explanations like the formation of coal, there is negligible use of nominalisation. In explanations where cause is also linked to increasing levels of technicality like how sound travels, nominalisations like “compression”, “rarefaction” and “series” are integral (Unsworth, 1997). In history, nominalisations also occur but rarely to construct subject-specific technical terms like “rarefaction”(Unsworth, 2001).

According to Halliday’s framework of nominalisation, English as foreign/second language students should be aware of the following pedagogical points (Ling, 2005):

- Nominalisation allows one to build cohesive and extended arguments on complex and abstract subjective matter. Nominalisation has a high production of process for coining new technical terms which are often nominalised terms in sciences and social sciences. However, it is challenging for foreign/second language learners to unpack the information encoded in nominalisations. Two main reasons are summarised: (1) the learners have no familiarity with the subject matter at hand since nominalisations distinguish the experts from non-experts; and (2) the loss of grammatical and semantic information in relation to the nominalisation process.
- Nominalisation is the source of vagueness since the inappropriate use of nominalisation may fail to provide a clear exposition on a subject matter. Foreign/second language learners must be aware that nominalisation serves the goals of economy of the expression and mystifying the subject matter.
- Nominalisation tends to affect the register of the text, as a text is also a social exchange between the writer and reader. Nominalisation directly affects the nature of the exchange, so the foreign/second language learners should adjust their style according to the nature of social exchange required.

2.6.4. The SFL grammatical feature of grammatical metaphor and the teaching of writing

Some studies about grammatical metaphor related to teaching of scientific writing find that school students are challenged to this linguistic feature which presents to comprehension and composition of science writing in schools. Some explorations on children's grammatical metaphor acquisition are reported. Students need tools for unpacking and strategies for revealing "the organisation and logic of scientific ways of using language" (Lemke, 2001, p. v) so that they can be empowered to effectively consume and critique the

discourse of science. In terms of this, Martin (1998) argues that schools have a responsibility to engage students in explicit learning of scientific language. Norris and Phillips (2003) further mention that modern western science is dependent on written text. This means that learning science in school necessarily involves learning to cope with the specialised language of science. Grammatical metaphor, especially in the form of nominalised processes, has been of particular importance in the evolution of scientific writing, and most notably that of the scientific research article (Banks, 2002). In respect to the improvements of the new types of grammatical metaphor and some practical applications in the teaching of academic writing, Ravelli (2003) revisits some of the difficulties in analysing grammatical metaphor - deciding what is and is not metaphorical - and in a consideration of academic writing, suggests that the fuzziness of this boundary is not just an analytical difficulty, but is also a productive linguistic feature. Bank (2003) also reveals that scientific writing involves typological variety which presents dissimilar characteristics in their use of nominalisation.

Apart from grammatical metaphor analysis in scientific writing, children's acquisition of metaphor is explored. Children are reported to use not only lexical metaphor but also grammatical metaphor, as in the use of nominal expressions instead of a whole sentence. The earliest metaphor reported is the use of postmodifiers within the nominal group (Painter, 2003). In addition, a dramatic increase in the use of metaphor is found to take place around age nine and is also influenced by context, especially teacher encouragement as well as the nature of the writing tasks that the child is required to master at school (Derewianka, 2003).

2.7. Summary

The review of the literature in this chapter provides a general picture of SFL development from the past to future on the basis of Halliday's (1978) language as social semiotic and Methiessen (2007) in terms of the future expectation of SFL from the vantage point of the phenomena under investigation (language and other semiotic systems) and the metalanguage used to investigate these phenomena. The review stems from Matthiessen and Halliday's (1997) work on systemic theory and its description with regard to discourse analysis, lexicogrammatical descriptions, theoretical development and its application. The literature review also focuses on the studies on the four grammatical features in relation to theoretical and descriptive analysis and their applications in teaching, especially in the teaching of writing.

With regard to the teaching of English writing in the Chinese context, the literature review examined Chinese tertiary students' teaching and learning situation in English writing, and the main theories used in tertiary writing teaching in China as well as the development of SFL in China. The above literature review in Chinese context reveals that Australian systemicists have made good use of Hallidayan linguistics in the educational field for many years. However, Chinese SFL scholars still focus their studies on theoretical descriptive application of the theory rather than using them in teaching to develop students' language proficiency of the target language. From the SFL theoretical and applied perspectives, this research again shows its importance of the exploration in language teaching by the use of SFL.

CHAPTER 3. AN ANALYSIS OF THEME, LEXICAL DENSITY, NOMINALISATION AND GRAMMATICAL METAPHOR

3.1. Introduction

In this chapter, the four related SFL grammatical features of Theme and Rheme, lexical density, nominalisation, and grammatical metaphor are examined. In the Theme and Rheme section, the discussion is focused on what Theme and Rheme are. Theme in different mood of a clause; Theme in clause complexes; thematic progression; and the relationship between discourse analysis and Theme are discussed. In the lexical density section, the examination centres on what lexical density is; what content/lexical and grammatical/functional words are; the formula of lexical density; and the relationship between written/spoken language and lexical density. In the nominalisation section, what nominalisation is; the nominalised structure; characteristics of nominalisation; nominalisation and academic/scientific writing are examined. Regarding the grammatical metaphor section, the discussion is on what grammatical metaphor is; the difference between metaphor and grammatical metaphor; what ideational metaphors, metaphors of transitivity, interpersonal metaphors, metaphors of modality, metaphors of mood are; grammatical metaphor in writing; and nominalisation and grammatical metaphor. Examples are given in the discussion of the above four grammatical features.

3.2. What are Theme and Rheme?

When looking at language from the viewpoint of textual metafunction, we can see how thematic organisation makes the development of the text cohesive and how speakers or writers construct their conversation or writing into smooth structures. In textual metafunction, a clause is analysed into Theme and Rheme.

Theme functions as the “starting point for the message” (Halliday, 1985b, pp. 39-41), the element which the clause is going to be “about” has a crucial effect in orienting listeners and readers. Theme is the starting point of the clause, realised by whatever element comes first, while Rheme is the rest of the message, which provides additional information to the starting point and which is available for subsequent development in the text. It contains the point of the clause, the information which the listener or reader should remember. Halliday (1994a, p. 38) characterises Theme as “what the message is concerned with: the point of departure for what the speaker is going to say”. The different choice of Theme contributes to a different meaning. English uses first clausal position as a signal. In the following clauses, different Themes are chosen to orient the meaning of the clauses.

- a. *Li Ping* read a very good book last night.
- b. *A very good book*, Li ping read last night.
- c. *Last night* Li Ping read a very good book.
- d. *What Li Ping read last night* was a very good book.
- e. *Li Ping*, he read a very good book last night.

As can be seen from the above clauses each of which has a different choice of Theme, Theme in each clause is the starting point which orients different meaning of the message. Theme in different clause patterns is shown in 3.2.1.

3.2.1. Theme in different mood of a clause

Theme is the starting point of the message so the whole of the first item must be included in the experiential meanings. It can be identified in different mood of a clause because the element that is typically chosen as Theme in an English clause depends on the choice of mood. Theme in different mood of a clause is shown below.

3.2.1.1. Theme in declarative clauses

Unmarked (Theme = Subject): In declarative clauses, if a Theme is conflated with the Subject, the Theme is Unmarked.

- a. *The girl* is reading.
- b. *The girl who is reading* was working very hard.
- c. *Oh, it's* great to see you.
- d. *There* was nothing in the box.
- e. *Of course* it's yours.

Marked (Theme \neq Subject): A Theme that is something other than the Subject in a declarative clause is referred to as a Marked Theme (Halliday, 1994a, p. 44). The most usual form of marked Theme is an adverbial group, or prepositional phrase functioning as Adjunct in the clause. For example:

- a. *Across the river* they saw the village.
- b. *When he came in*, I was watching TV.
- c. *Suddenly*, I saw the Officer's face light up.
- d. *At the bottom of my suitcase* he spotted a tiny bottle.

3.2.1.2. Theme in interrogative clauses

The typical function of an interrogative clause is to ask a question and people in real life ask questions for all kinds of reasons in request for an answer. The natural Theme of a question is *what I want to know*. There are two main types of question: polarity (yes/no) and the wh- questions.

Polarity (yes/no) questions: In polarity questions, unmarked Theme is “finite + Subject”, such as *is, isn’t; do, don’t; can, can’t; have/has, haven’t/hasn’t*; etc. In the polarity question, what people want to know is the polarity “yes or no”.

- a. *Have you* anything to declare?
- b. *Would you* like a cup of coffee?
- c. *By the way, have you* posted the letter?

Wh-questions: In wh-questions, unmarked Theme is “wh-word” which requests for information, such as *when, where, who, what, how, why*. Normally, the nominal group, adverbial group or prepositional phrase functions as interrogative (wh-) element.

- a. *What* was the Customs Officer looking for?
- b. *What sort of business* does John Butlin run?
- c. *In order to get the information, what* do we have to do?
- d. *Why* did Jane take John’s wallet?
- e. *How low* does the temperature drop in winter?

3.2.1.3. Theme in imperative clauses

Theme in imperative clauses: In imperative clause, the Predicator (the verb) is normally found as the Theme. The verbal group functions as the Theme in an affirmative clause; however Theme should be “don’t + verbal group” if it is a negative clause.

- a. *Lock* the door before you leave.
- b. *Don’t open* the window while the baby is sleeping.
- c. *Let’s sing* a song together.

- d. *Please have a look at the map.*

3.2.1.4. Thematic equative

In Thematic equative, Theme = Rheme:

- a. *What he gave his son* was a birthday gift.
- b. *What she did* was to return the letter to the postman.
- c. *The reason she told you where she was going* is because she hoped that you would not be waiting for her.

According to the Theme theory, the first position in a clause is important. Important elements can be brought to the front of the sentence where the speaker or writer decides with what to start the clause and the beginning of each clause is its Theme.

3.2.2. Theme in clause complexes

As can be seen from the position of Theme in a single clause, Theme is realised by whatever element comes first in different mood clause. Themes can be seen in clause complexes which refer to clauses consisting more than one clause. There are two different ways of analysing the dependent clause and each captures different aspect of what is going on. The analysis of Themes in clause complexes is illustrated in Table 3.2.2 below.

As the universe expanded, the temperature of the radiation decreased.

Table 3.2.2.: Theme analysis in dependent clause

As the universe	expanded,	the temperature of the radiation	decreased.
Theme		Rheme	
Theme	Rheme	Theme	Rheme

3.2.3. Multiple Themes

According to the Theme theory, the first position in the clause is important and the kernel clause structure may be altered to bring elements to the front of the clause where the speaker or writer decides with what to start the clause and the beginning of each clause is its Theme. A simple Theme may include only experiential or topical element. However, we should also consider clauses that contain more than one element other than the subject brought to the front place. For example, *Moreover, personally*, he thinks he is the right person who can solve your problems. The first front place element *Moreover* organises the text sequentially and tells us that this section is coming to a close (a textual function). *Personally* signals his attitude towards what he has to say, and has an interpersonal function. The next element, *he*, is part of the content or ideational meaning of the message, as Halliday (1985, p.56) calls it, the topical Theme. The unmarked (most frequent) order for complex Themes can thus be textual + interpersonal + ideational:

Table 3.2.3a.: (Halliday, 1985b, pp. 53-54)

Theme	Textual	Interpersonal	Ideational
Examples	Moreover	frankly	Joe Smith
	Likewise	obviously	Burglars...
	For instances	personally	I...

In some clauses, the topical Theme may contain interpersonal and textual elements. If three possible Themes are found: Textual Theme , Interpersonal Theme, and Topical Theme . Thus the clause is said to have multiple Themes.

- Textual Theme connects its experiential meanings to the meanings of neighbouring clauses, functioning to relate the meanings of the particular clause to the other parts of the text. It is any combination of (i) continuative, (ii) structural and (iii) conjunctive Themes (Halliday, 1994a, p. 53).
- Interpersonal Theme indicates the kind of interaction between the speakers and the positions that they are taking, often functioning to code the speaker's or writer's personal judgement on a meaning. It is any combination of (i) vocative, (ii) modal, (iii) mood-making Themes (Halliday, 1994a, pp. 53-54).
- Topical Theme, functioning as the point of orientation for the experiential meanings of a clause.

The components of a multiple Theme are shown in Table 3.2.3b as follows:

Table 3.2.3b.: *Components of a multiple Theme (Halliday, 1994a, p. 54)*

Metafunction	Component of Theme
Textual	<ul style="list-style-type: none"> • Continuative (discourse signaller/Marker: yes, no, well, oh, now, which signals that a new move is beginning) • Structural (conjunction: and, or, nor, either, neither, but, yet, so, then, when, while, before, after, until, because, even, in case... or WH-relative: which, who, whose, when, where, that...) • Conjunctive: relates the clause to the preceding text such as that is, for instance, rather, in any case, in fact, in short, actually, and, also, moreover, but, on the other hand, instead, meanwhile, then, likewise, so, if, yet, as to that...

Interpersonal	<ul style="list-style-type: none"> • Vocative: any item used to address such as a personal name. • Modal: any of the modal Adjunct which expresses the speaker's judgment regarding to relevance of the message such as probably, possibly, certainly, perhaps, maybe, usually, sometimes, always, occasionally, generally, regularly, of course, I think, in my opinion, personally, frankly, to be honest, honestly, please, kindly, evidently, hopefully, in general, strictly speaking, wisely, to my surprise... • Mood-marking: a finite verbal operator • is, isn't; are, aren't; do, don't; does, doesn't; can, can't; will, won't; have, haven't; has, hasn't; did, didn't; etc. • WH- TH-: Interrogative • Relative, definite: which one, who, that, whose, when, where • Relative, indefinite: whichever, whoever, whatever, whomever, whenever, wherever, however.
Experiential	<ul style="list-style-type: none"> • Topical (participant, circumstance, process)

According to the components of a multiple Theme shown in Table 3.2.3b, further analysis of multiple Themes is illustrated below.

Table 3.2.3(c, d, e, f).: *Examples of multiple Themes (Halliday, 1994a p. 56)*

(c)

Oh	soldier, soldier	won't	you	marry me
Continuative	vocative	finite	topical	
Textual	interpersonal		experiential	
Theme				

(d)

Please	doctor	don't	give	me any more of that nasty medicine
Modal	vocative	finite	topical	Rheme
Interpersonal			experiential	
Theme				

(e)

On the other hand	maybe	on a week day	it would be less crowded
Conjunctive	mod	topical	Rheme
Textual	interpersonal	experiential	
Theme			

(f)

So	why		worry
Structural	WH- = topical		
Textual	interpersonal	experiential	
Theme			

3.2.4. Thematic progression

Readers and addressees usually need to be reassured that they are following the development of the text, and many texts are signposted by placing elements from the Rheme of one clause into the Theme of the next or by repeating meanings from the Theme of one clause in the Theme of subsequent clauses (Butt, Fahey, Spinks, & Yallop, 1997, p. 98). These are thematic progression patterns and the basic principle underlying these patterns is that thematic choices should not be unexpected – they should be connected with ideas presented in a previous Theme or Rheme. Danes' (1974, pp. 106-128) concept

of thematic progression is by extending the concept of Theme as point of departure of a single utterance (clause) to that of explaining the inner connexity of texts. Thematic progression might be viewed as “the skeleton of the plot”. There are five main distinct patterns of thematic progression:

3.2.4.1. Parallel progression

This pattern keeps the same topical Theme (T) in focus throughout a sequence of clauses. Information is built up in the Rheme (R) of each clause.

T ----- R1
T ----- R2
T ----- R3

Table 3.2.4.1.: *Parallel progression*

Theme	Rheme
Li Ping	was born in China.
He	was very interested in learning English.
And (he)	always tried to find opportunities to speak English with his friends.
When he	was twelve,
He	could communicate with his foreign friends freely.

3.2.4.2. The continuous, linear or “zig-zag” progression

In this sequence, an element that is first introduced in the Rheme of a clause becomes the Theme of the next clause, and so on. Each R becomes the T of the next utterance.

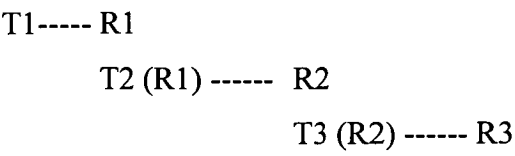


Table 3.2.4.2.: *The continuous, linear or “zig-zag” progression*

Theme	Rheme
Outside my window	is a big lawn.
In the middle of the lawn	is a flower bed.
The flower bed	is full of roses.
The roses	are my favourite flowers.

3.2.4.3. **The crisscross progression**

In a crisscross progression, the Theme in the first clause becomes the Rheme in the second clause. And the Theme in the second clause becomes the Rheme of the third clause and so on.

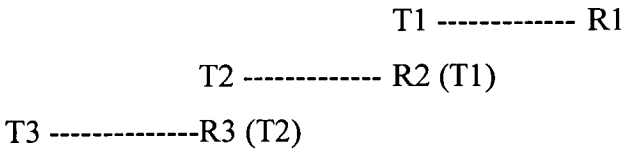


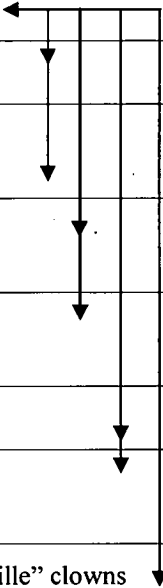
Table 3.2.4.3.: *The crisscross progression*

Theme	Rheme
The play (T1)	was interesting,(R1)
but I(T2)	didn’t enjoy it.(R2/T1)
A young man and a young woman(T3)	troubled me.(R3/T2)
I (T4)	turned round and looked at them,(R4/T3)
but they(T5)	didn’t pay any attention to me.(R5/T4)

3.2.4.4. **The split Rheme pattern**

In the split Rheme pattern, the Rheme of a clause contains an element which can be split up and used for the Themes of the subsequent clauses.

Table 3.2.4.4.: *The split Rheme pattern (Droga & Humphrey, 2002, p. 124)*

Theme		Rheme
There (T1)		are four basic types of clowns. (R1)
Whiteface clowns (T2/R1.1)		cover their face with white make-up (R2)
and (they)(T2/R1.1)		do a lot of physical stunts like leaping and tumbling. (R3)
Auguste clowns (T3/R1.2)		wear colourful, ill fitting clothing and oversized shoes. (R4)
They (T3/R1.2)		also have bulbous noses and brightly coloured wigs. (R4)
Character clowns (T4/R1.3)		make fun of the human condition. (R5)
and (they) (T4/R1.3)		may impersonate characters such as a cowboy, fireman, tramp or policeman. (R6)
The more recent “New Vaudeville” clowns (T5/R1.4)		involve the audience in the performance. (R7)

3.2.4.5. **Centralised progression**

Here each clause has got a different Theme but the same Rheme.

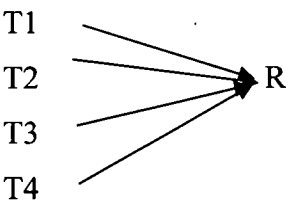


Table 3.2.4.5.: *Centralised progression*

Theme	Rheme
I	went to the theatre last week.
He	went to the theatre.
She	went to the theatre, too.

As can be seen from the above five main thematic progression patterns, they are important to help foreign language learners control thematic development of texts in various genres and to help them make choices about various modes of text development. In the next section, the discussion moves to the larger units of discourse and how textual coherence is created.

3.2.5. Discourse analysis and Theme

Discourse analysis is the study of meaningful language units larger than a clause. Much of the language teaching is conducted with: clause, pronoun, adverbial, conjunction and so on. Discourse analysis makes the link between grammar and discourse by using a set of less familiar words: Theme, Rheme, reference, anaphoric and so on. Structuring the individual utterance, clause and sentence is inseparable with structuring the larger units of discourse and creating textual coherence. Discourse analysts are interested in the implications of these different structural options for the creation of text. Furthermore, they concentrate on not only thematising in clauses, but also the sequencing choices of clauses within sentences, sentences within paragraphs and discourse-related type. In English the first clause of a paragraph is also the Theme of that paragraph (topical clause), whereas the following clauses have a rhematic value (supporting clauses), which develop the idea proposed by the Theme by means of examples, counterarguments, etc.

It is a good way to start by teaching the ways of presenting variations in clause structure in relation to discourse functions as discourse analysis deals with how language is taught. The notion of Theme and how it is realised in English is an area where grammatical structure and discourse function seem most closely allied. However, the natural data shows that variations of standard SVOA order happen much more frequently than it might have been thought. Therefore, the structural options are organised to describe how meanings are made in texts and Theme and discourse cannot be separated from each other.

Theme can often assist in the writing development of different genres, such as academic essays, reports and other forms of abstract materials and so on.

Below are examples of a report text analysed for Theme and the Themes are highlighted in bold (Unsworth, 1993b, p. 214).

Whales

- a. **Whales** are facing extinction. **The few whales which are left** travel along the coastlines of many countries. **The whales** travel in large groups. **Whales** are large mammals. **They** have a layer of skin, blubber, meat, then their bones.
- b. **Japan** kills around 600 whales per year. **When the Japanese hunters** arrived in boats to kill some whales, **Greenpeace** went into action. **Greenpeace** went in inflatable boats close towards the Japanese boat to prevent the killing. **Greenpeace** managed to save 60 whales, **but unfortunately the Japanese** did kill 24. **The Japanese** claim that **whale meat** is a part of their culture.
- c. I think **that there** should be a law against the killing of whales, **but if the scientists** must do some research, **they** can kill one a year, **but the scientists** need a permit.

The thematic progression of the three paragraphs of the above text is as follows

(T = Theme; R = Rheme):

(a) T ----- R1

T ----- R2

T ----- R3

T ----- R4

T ----- R5

(b) T 1---- R1

T 1---- R2

T2 (R2) -----R3

T2 (R2) ----- R4

T3 (R4) ----- R5

(c) T1 ----- R1

T2 ----- R2

T2 ----- R3

T2 ----- R4

From the above paragraphs, the distribution of Themes are expected and they are connected with the ideas presented in the text which has some control of paragraphing, in that each paragraph is organised around the related Topical Themes. They are *whales* in paragraph (a), *Japan* and *Greenpeace* in paragraph (b), and *scientists* in paragraph (c). Topical Themes also clearly realise logical relationship between the clauses within each paragraph. In this clause *But unfortunately the Japanese did kill 24, but* is the Textual Theme, which functions to relate the meaning of the particular clause to the other parts of the text; and *unfortunately* is the Interpersonal Theme, which indicates the writer's or speaker's personal judgement on the meaning; and *Japanese* is the Topical Theme.

3.2.6. Summary

Theme and Rheme is the crucial part of textual metafunction of Systemic Functional Linguistics. The analysis of thematic structure helps readers understand the organisation and mode of the text and it also helps readers understand how the speakers distribute information through textual organisation. This section not only gives a brief introduction of the concept of Theme and Rheme but also Theme in different mood of a clause, in clause complexes, multiple Themes and thematic progression and the relationship between discourse and Theme. Understanding these, students become more aware of how to organise their text into a coherent whole and keep their readers well informed about where they are and where they are going.

3.3. What is lexical density?

Written English tends to be lexically dense. Halliday (1985c, pp. 39-41) analysed the functions of written English and pointed out that it is not simply a “spoken language written down”. In this section, the features of lexical density in written English, content/lexical and grammatical/functional words, formula of lexical density, the difference between written/spoken language and scientific writing as well as lexical density are examined.

Halliday and Martin(1993, p. 76) define lexical density as a measure of the density of information in any passage of text, according to how tightly the lexical items (content words) have been packed into the grammatical structure.

3.3.1. Content/lexical and grammatical/functional words

The lexical density of a text can be calculated by expressing the number of content carrying words in a text/clause as a proportion of all words in the

text/clause. Content carrying words include nouns, the main part of the verb, adverbs and adjectives (Eggins, 1994, pp. 60-61). There are so many of them in our language, such as John, room, answer, happy, new, large, grey, search, grow, hold, have, really, completely, very, also, enough and so on. Non-content carrying words include prepositions, conjunctions, auxiliary verbs, and pronouns. In contrast, grammatical/functional words have little lexical meaning, but they express grammatical relations with other words within a clause, or specify the attitude or mood of the speaker. They are often short words which include: in, here, will, I, the, after, when, though, since, because, to, and, them, for, thus, where, how, you, who, his, but, while, whose, etc. For example (The content/lexical words are in bold):

- a. I **worked** here. (1/3)
- b. **Stupid people work carelessly.** (4/4)

As can be seen from the two clauses above, the proportion of content carrying words against the total number of words in the clause is 1/3 in clause (a) and 4/4 in clause (b).

3.3.2. Formula of lexical density

By contrasting the written and spoken versions of the same text, Eggins (Eggins, 1994, p. 61) finds that on average the spoken text has a lexical density of 33%, while the written version 42%. Written texts try to pack more meanings into each clause. The lexical density of a text can be calculated and the formula is as follows:

T = total number of the words in a text

L = lexical/content words in a text

Lexical density = $L/T \times 100\%$

For example, if a text has 51075 words and 44518 content words ($T = 51075$; $L = 44518$), then the lexical density = $44518/51075 \times 100\% = 87.16\%$.

As can be seen from the calculated result above, the lexical density of this text is comparatively high and as a result, the passage becomes difficult to read.

3.3.3. Written/spoken language and lexical density

Lexical density levels distinguish writing from speech, with the latter being characterised by lower levels. Halliday (1985b) analysed the functions of written English, and shows that it is not simply a “spoken language written down”. Written English tends to be lexically dense, that is, it has a high ratio of content to functional words and a small number of clauses. Let us consider the ratio of content words in the two clauses below (the lexical words are in bold).

- a. **Magnetic materials** are **materials** that are **attracted** to **magnets**.
(5/9)
- b. My **mother** used to **tell** me about the **singer** in her **town**. (4/12)

As shown from the two clauses above, we can see that the first one (5/9) has a higher lexical density than the second one (4/12). Therefore information contained in the first clause is more than that in the second clause and thus more meanings have been packed into the first clause. In informal spoken language, the lexical density tends to be low - about two lexical words per clause is quite typical. When the language is more planned and more formal, the lexical density is higher, and since writing is usually more planned than speech, written language tends to be denser than spoken language, often having about four to six lexical words per clause. In any piece of text or discourse, there are variations in lexical density from clause to clause but, generally, the lexical density of spoken language tends to be lower than written language

since writing is more planned and formal. One of the most important differences between spoken language and written language is that written language displays a much higher ratio of lexical items to the total running words (Halliday, 1985c, p. 61). The difference between written language and spoken language is one of density: the density with which the information is presented. Relative to each other, written language is dense while spoken language is sparse.

Spoken language is more complex than written, but each of them is complex in its own way. The complexity of written language is lexical, while that of spoken language is grammatical (Halliday, 1989b, pp. 61-63). To say that written language is “denser” is to suggest that, if we look at it from the perspective of spoken language, then written language will appear to be more complex. We could have said that the difference between spoken language and written language is one of intricacy, the intricacy with which the information is organised. Spoken language is more intricate than its written counterpart.

3.3.4. Lexical density of scientific writing

In scientific writing, the lexical density may go much higher. The language appears complicated because it involves a large number of inter-relating technical terms and each of which has been defined and “contains” information the reader is expected to understand already and scientific language has developed to enable scientists to communicate effectively. Halliday and Martin (1993, p. 71) suggest seven headings which can be used for illustrating and discussing the difficulties that are characteristic of scientific English: 1. interlocking definitions, 2. technical taxonomies, 3. special expressions, 4. lexical density, 5. syntactic ambiguity, 6. grammatical metaphor, 7. semantic discontinuity. Lexical density is one of the seven headings used for illustrating and discussing the difficulties that are characteristic of scientific English. In the

following three clauses extracted from Scientific American (December, 1987), (Halliday & Martin, 1993) illustrate the characteristics of scientific writing.

- a. *Griffith's energy balance approach to strength and fracture also suggested the importance of surface chemistry in the mechanical behaviour of brittle materials.*(13/22)
- b. *The conical space rendering of cosmic strings' gravitational properties applies only to straight strings.*(10/14)
- c. *The model rests on the localised gravitational attraction exerted by rapidly oscillating and extremely massive closed loops of cosmic string.*(14/20)

The calculation of the lexical density of the above three clauses are 60% (a), 71.4% (b) and 70% (c). According to the results above, the three clauses are all high in lexical density and the lexical density of these three clauses are considerably higher than the average percentage of a written text (42%). When the lexical density is as high as this, the texts become difficult to read. After further analysis of these three clauses, we may find that nominal groups and strings of lexical words without any grammatical words in between are the main characteristics of these scientific writings, and nominalisation builds long noun phrases to produce a lexically dense style, such as *the importance of surface chemistry, the mechanical behaviour of brittle materials, The model rests...* and *Griffith's energy balance approach, cosmic strings' gravitational properties*. These characteristics make the clauses difficult to understand because each word contains information. However scientific language has been developed to enable scientists to communicate effectively.

3.3.5. Summary

Lexical density is the most important characteristic which distinguishes written language from speech. The awareness of this grammatical feature is essential to foreign language learners in improving their written English. In this section, the concept of lexical density and features of lexical density in written English have been introduced. Content/lexical words which decide how lexically dense a clause is and grammatical/functional words which express grammatical relations among the words within a clause have been further explained. The formula of lexical density, the difference between written/spoken language and the characteristics of scientific writing have been examined.

3.4. What is nominalisation?

Nominalisation is a special feature of English academic and formal writing. It helps to create a style of writing with density, complexity and abstractness. This section will introduce the grammatical feature of nominalisation, the nominalised structure, characteristics of nominalisation. Nominalisation and academic/scientific writing will also be discussed.

Nominalisation is the use of a nominal form to express a process meaning (Thompson, 1996, p. 167). Nominalisation is a process whereby a verb or adjective is transformed into a Nominal group. In English, some verbs and adjectives can be used directly as nouns, for example, record and musical (as in Broadway musical), while others require some form of morphological transformation requiring a suffix, for example, *nominalisation* from *nominalise*; *information* from *inform*; *investigation* from *investigate*; *difficulty* from *difficult*; *hardness* from *hard* and so on. When a verb is nominalised, it becomes concept rather than an action. For example:

- a. The city government *has decided* to widen the road through this neighbourhood. This has upset the local residents.
- b. The city government's decision to widen the main road though this neighbourhood has upset the local residents.

As can be seen from the above two clauses, clause (a) contains two clauses. With the nominalisation (decision) in clause (b), the two clauses join together to become a single clause which packs in several complex abstract ideas and this is characteristic of academic writing.

3.4.1. The nominalised structural adjustments

Givón (1993, pp. 288-289) describes a set of structural adjustments of nominalisation. Based on structural adjustments, learners can produce a nominalised structure consciously. They are summarised as follows:

1. The erstwhile verb in the verbal structure becomes the head noun of the nominalised structure.
2. The erstwhile verb loses its verbal inflections and takes on noun-like morphology.
3. The subject and direct object often take on the genitive (possessive) case.
4. The subject and the object may be converted into possessive determiners. The whole nominalised noun phrase may acquire a definite or an indefinite article.
5. Manner adverbs in the verbal structure become corresponding adjectives that modify the head noun in the nominalised noun phrases.

These nominalised structural adjustments are illustrated in the examples as follows:

- The police rapidly investigated the murder → *the police's rapid investigation of the murder*
- Structural Adjustments 1 and 2: investigate → *investigation*
- Structural Adjustment 3: the murder → *of the murder* (the object becomes the genitive)
- Structural Adjustment 4: The police investigated → *the police's investigation* (the subject becomes the possessive determiner)
- Structural Adjustment 5: The police rapidly investigated → *the police's rapid investigation* (the manner adverb *rapidly* becomes the adjective *rapid*)

Knowing the nominalised structural adjustments is important for foreign language learners to use nominalised forms in their writing to make their writing more academic. However, teaching nominalisation proved to be challenging for EFL learners. The problems and difficulties of the application of nominalisation and the pedagogical implications will be discussed in Chapter 5.

3.4.2. Characteristics of nominalisation

Nominalisations are found to occur most frequently in academic papers with 92 occurrences per 1,000 words, as compared to 27 per 1,000 in conversations, 56 per 1,000 in lectures, and 55 per 1,000 in letters (Chafe & Danielewicz, 1987, p. 99). According to the analysis of the grammatical feature of nominalisation used in academic writing, the characteristics of nominalisation are summarised below.

- Nominalisation makes actions or processes (verbs) become concepts (nouns).
 - a. We *walked* for charity. We raised money for the Children's Foundation.
 - b. The charity *walk* raised money for the Children's Foundation.

Academic writing or adult writing frequently uses nominalisations, that is, the noun forms of verbs. The process of nominalisation turns verbs (actions or events) into nouns (things, concepts or people). The text is now no longer describing actions; rather it focuses on objects or concepts. As can be seen from the examples above, when a verb is nominalised, it becomes a concept rather than an action. As a consequence, the tone of the writing sounds more abstract and also more formal. In addition, one powerful means of producing a lexically dense style is by using nominalisation to build long noun phrases.

- With nominalisation, a single clause packs in several complex abstract ideas.
 - a. Every day shops *lose* thousands of dollars worth of valuable items. And this affects us all because prices increase and we have to pay extra.
 - b. *The daily loss of thousands of dollars worth of valuable stock ultimately* affects us all through *an increase in prices*.

Christie (2001, p. 66) mentioned that nominalised phrases “abstract away from immediate, lived experiences, to build instead truths, abstractions, generalisations, and arguments,” so the normalised phrases can be the participants in the process. When writers nominalise, they change the verb into a noun in a noun phrase instead of using a verb in a clause to represent an

action. By comparing the above two clauses, we can see that several complex abstract ideas are packed into one single clause.

- Nominalisation builds long noun phrases to produce a lexically dense style.
Hubble's finding about the expansion of the galaxies revolutionised *our understanding of the Universe and its origins*.
- Nominalisation reduces the number of clauses and more information can be compressed into a nominal (noun) group.
 - a. If you invest in rail facilities, this implies a long-term commitment.
 - b. *Investment in rail facilities* implies *a long-term commitment*.

The original clauses have three clauses while the nominalised clause has only one.

- When verbs are nominalised they become concepts rather than actions. As a result, the writer is able to increase the amount and density of information to make further comment or observation about the concept in the clause.
For example:

- a. The company decided to expand its asset base.
- b. *The decision* to expand the asset base... (The verb is nominalised)
- c. The decision to expand the asset base was *a significant shift in the company's financial strategy*. (More information commenting upon the newly formed concept can now be added.)

According to the above examples, the verb in the first clause is nominalised in the second clause. As such, the writer can add more information commenting upon the newly formed concept.

- Nominalisation enables an academic writer to concisely refer to recurring abstract ideas, for example:

My thesis is that there is “unity in diversity”. However, we can neither understand nor appreciate the world’s diversity without perceiving how unity itself generates and continually changes diversity. We all have to live in this one world in which diversity must be *tolerated* and could be *appreciated* in unity. Of course, I refer to *toleration* and *appreciation* of *diversity* in ethnicity, gender, culture, taste, politics, and colour or “race”. I do not advocate *acceptance of inequality* in gender, wealth, income, and power without struggle (Frank, 1998).

In the above text, the writer uses the nominalised phrase *toleration and appreciation of diversity* to refer to the three ideas mentioned in the preceding context and connect them to items of the notion of diversity, namely, gender, culture, taste, politics, colour, and race. And the nominal phrase *acceptance of inequality* marks a new topic which echoes the structure of the previous nominalised phrase and thus creates a sense of stylistic balance and cohesion.

Nominalisation builds long noun phrases to produce a lexically dense style and this is the reason why scientific writing is difficult to understand. Among the specific grammatical features of scientific writing discussed by Halliday and Martin (1993) is the nominalisation of processes. Nominalisation allows the author to create technical terms or new entities, to establish cause and effect relationships between disparate phenomena, and to synthesise and systematise previously stated information (Veel, 1997, p. 184). However, nominalisation involves more than remodelling of grammar (or re-grammaticising). It is also a process of re-meaning or re-semanticising (Halliday, 1998c). When an action or event is reworded as a nominal group, much of the semantic information becomes lost or, rather, hidden, and ambiguity often sets in.

3.4.3. Summary

This section examines the concept of the grammatical feature of nominalisation. Nominalisation, the nominalised structural adjustments, the characteristics of nominalisation are discussed to illustrate how the language works to pack various meanings in a clause and how the tone of writing sounds more abstract and more formal with nominalisations. Developing nominalisation awareness in writing among Chinese learners of English is crucial.

3.5. What is grammatical metaphor?

Grammatical metaphor is a term used by Halliday (1985b, p. 321) to refer to meaning transference in grammar. Instead of the congruent realisation of a norm, metaphorical representation has become the norm in many instances. Metaphorical modes of expression are characteristic of all adult discourses (Halliday, 1994a, p. 342). The shift from congruent to metaphorical modes of expression is also a characteristic of written English. This section mainly examines the features of grammatical metaphor, ideational metaphor, interpersonal metaphor, grammatical metaphor in writing as well as nominalisation and grammatical metaphor.

Languages have their most natural ways of encoding the meanings which they express and this is called the congruent ways. The non-congruent ways of encoding language are referred to as grammatical metaphor (Halliday, 1994a, 1998a; Halliday & Matthiessen, 1999; Matthiessen, 1995a; Ravelli, 1988). Grammatical metaphor is a substitution of one grammatical class, or one grammatical structure, by another; for example, *his departure* instead of *he departed* (Halliday & Martin, 1993, p. 79). Halliday uses the term grammatical metaphor to refer to the meaning transference from congruent to metaphorical in grammar. Congruent forms reflect the typical ways that we construe

experience. In congruent forms, verbs represent actions or processes, nouns represent participants and adverbs or prepositional phrases represent circumstances and conjunctions express the relations between one process and another. However, with the development of language, the original relation is often changed. People often turn verbs into nouns, adjectives into nouns and clauses into noun phrases and these changes are called grammatical metaphors. For example:

1. a. After the announcement, people *applauded*.
 b. *Applause* followed the announcement.
2. a. She *spoke* about five points.
 b. Her *speech* covered five points.

Regarding the above two clauses, (1)b and (2)b are metaphorical forms, because in these two clauses, the processes *applauded* and *spoke* are substituted by the nominal types of participants of *announcement* and *speech*.

According to Halliday, there are two main types of grammatical metaphors in clauses: metaphor of mood (including modality), and metaphor of transitivity. In terms of the model of semantic functions, these are interpersonal metaphor and ideational metaphor.

3.5.1. Ideational metaphor (Metaphor of transitivity)

Ideational metaphor is an incongruent representation of the experiential meaning. It is mainly represented by the transitivity system. In the English transitivity system, there are six main types of processes: material, mental, relational, behavioural, verbal and existential processes and these can be found in the grammatical categories. A process consists of three components: (1) the process itself; (2) the participants in the process; and (3) the circumstances associated with the process. The transformations can be between the processes

and a shifting of participants and circumstances. This is what Halliday refers to as grammatical metaphor. Metaphors of transitivity are italicised in the following examples:

1. a. Mary *saw* something wonderful. (Halliday, 1985b)
b. Mary *came upon* a wonderful sight.
c. A wonderful sight *met* Mary's eyes.

(1)b and (1)c are interpreted as metaphorical variants of (1)a. In (1)b, the mental process *saw* has been represented as a material process *came upon* and the perception has been turned into a Participant *sight*. In (1)c, the process has been split up into an Actor *sight*, a material Process *meet* and a Goal *eyes*; and *Mary* represents simply the possessor of the eyes.

2. a. John put the nail into the plank *with a hammer*. (Circumstance manner)
b. *The hammer* put the nail into the plank. (Participant)
c. John *hammered* the nail into the plank. (Material process)
3. a. They arrive at the summit *on the fifth day*. (Circumstance: time).
b. *The fifth day* saw them at the summit. (Participant/Sensor)

The experiential metaphorical form of mental process is illustrated in Table 3.5.1b below.

4. a. Great changes took place in Guangzhou in 1980. (Congruent form)
b. *1980 saw the great changes in Guangzhou*. (Metaphorical form)

Table 3.5.1a.: *Congruent form*

Great changes	took place	in Guangzhou	in 1980	Congruent
Participant: Goal	Process: material	Circumstance: place	Circumstance: time	Function
Nominal group	Verbal group	Prepositional phrase	Prepositional phrase	Class

Table 3.5.1b.: *Experiential metaphorical form of mental process*

1980	saw	great changes	in Guangzhou	Metaphorical
Participant: Senser	Process: mental	Participant: Phenomenon	Circumstance: place	Function
Nominal group	Verbal group	Nominal group	Prepositional phrase	Class

As can be seen from Table 3.5.1a, the clause reflects the typical way we construe our experience and in the congruent form, the verb *took place* represents actions or processes, the nominal group *Great changes* represents participants and the prepositional phrases *in Guangzhou* and *in 1980* represent circumstances of place and time. In Table 3.5.1b, the original relations have changed. The circumstance of time *in 1980* had been dressed up to look as if it is a participant of Senser and an onlooker seeing the great changes and the original participant of Goal *great changes* is turned into a participant of Phenomenon.

3.5.2. Interpersonal metaphor

The functional grammar also takes metaphor of an interpersonal kind into consideration. Interpersonal metaphor mainly concerns the area of modality and mood.

3.5.2.1. Metaphors of modality

A metaphor of modality can be substituted by a proposition. When modality is expressed metaphorically, projection is involved. The projecting clause involved normally has a word or proposition which signifies belief, likelihood, certainty, or other features which one connects with modality. Interpersonal metaphor of modality encourages us to express a meaning metaphorically. For example, we would say *I think*, when we mean—*probably*; or, *I believe*, when we mean—*almost certainly*; or, *don't you think*, when we mean—*definitely*. For example:

1. It probably can't be proved by statistics. → I *don't think* it can be proved by statistics.

In another example, in order to express the likelihood of Li Ping having gone to Beijing already, there are a few possible expressions:

2. a. Li Ping *must have gone* to Beijing.
b. Li Ping will *certainly have gone* to Beijing by now.
c. *I think* Li Ping has already gone to Beijing.
d. It is very *likely* that Li Ping has already gone to Beijing.
e. Everyone *believes* that Li Ping has already gone to Beijing.
f. It is *clear* that Li Ping has already gone to Beijing.

In clauses (2)a and (2)b, the same meaning of likelihood are realised by a modal verb *must* (a) or a modal adverb *certainly* (b), which occur within the clause structure itself. Halliday calls these expressions of modality. While in (c), (d), (e) and (f), the different degree of certainty is decided by the word with modal meaning outside of the original clause, such as the verbs *think* (c) and *believe* (e), or the particular types of adjectives *likely* (d) and *clear* (f). Halliday

(1994a, p. 354) calls such expressions interpersonal metaphors of modality, where the modal meaning is realised outside the clause (as in contrast with the standard encoding by means of modal verbs or adverbs, which lie within the clause structure). In this case, again, the metaphors are based on a borrowing. For example, the verb *think* can be borrowed to express a modal meaning, as in example (c).

3.5.2.2. Metaphor of mood

Another main type of interpersonal metaphor is the metaphor of mood which expresses the speech function of giving or demanding information or goods and services. According to Halliday (1994a, p. 363), mood expresses the speech functions of statement, question, offer and command. Statements are expressions which give information; questions are expressions which ask information; offers are the expressions which put forward something to be considered, accepted or refused; and commands are expressions which ask for something to take place. Each of these functions has its standard, default type of encoding: statements are encoded by the declarative, questions by the interrogative, and commands by the imperative clauses. For example:

- 1 a. Where did you park the car?
- b. The car is in the garage.
- c. Show me the car!

The examples (1)a and (1)b above are expressions of question and statement and they are quite straightforward, but with regard to the command (1)c, the situation is different. There are a large variety of ways that can be used to express the same command and the variations are illustrated as follows:

- 2 a. Tell me where you parked the car, please.

- b. Could you tell me where you parked the car, please?
- c. I would advise you to tell me where you parked the car.
- d. You are kindly requested to tell me where you parked the car.
- e. It is recommended that you tell me where you parked the car.
- f. It is advisable to tell me where you parked the car.

According to Halliday, the various expressions above are under the notion of interpersonal metaphor of mood because they are considered as metaphorical and they deviate from the standard, most straightforward realisation of a command by means of the imperative mood. Interpersonal metaphor is mostly associated with mood which expresses the speech function.

3.5.3. Nominalisation and grammatical metaphor

Halliday (1998a) points out that lexical density, nominalisation and grammatical metaphor are the main lexicogrammatical characteristics of written (academic) language. The idea of a lexical metaphor in a conventional, lexical sense is accepted in SFL theory but it is the notion of grammatical metaphor, developed mainly by Halliday (1994a) that represents the more original and innovative contribution to linguistic theory. Nominalisation has been known as “the single most powerful resource for creating grammatical metaphor” (Halliday & Matthiessen, 2004, p. 656). It has been suggested that nominalisation probably “evolved first in scientific and technical registers” and then gradually spreads to other areas of adult discourse and becomes a mark of prestige and power (Halliday & Matthiessen, 2004, p. 657). Grammatical metaphor is a resource language used to condense information by expressing concepts in an incongruent form which is very valued in scientific and academic registers as a way of expressing “objectification” and “abstraction”.

In addition, grammatical metaphor has been of particular importance in the evolution of scientific writing, especially in the form of nominalised processes.

Two crucial consequences of nominalisation as grammatical metaphor are worth noting.

1. Some of the grammatical information encoded in a verbal structure may be lost in the process of nominalisation. For example, the Classifier + Thing construction *alcohol impairment* gives no indication of the semantic relation between the two and could be agnate to *alcohol impairs* (*alcohol* as an Actor), *alcohol is impaired* (*alcohol* as a Goal). Real world knowledge is required to disambiguate the construction. As a result, Halliday and Matthiessen (2004, p. 657) observed that highly metaphorical discourse tends to mark off the expert from those who are uninitiated.
2. Nominalisation as grammatical metaphor may obscure the nature of the event being represented. According to Fairclough (2003, p. 143), both tense and modality are lost in nominalisation and the participants of a process can sometimes be omitted as well. Researchers in Critical Discourse Analysis have argued that nominalisation is often used in news reports to mystify the nature of the news event or the agents associated with events (O'Halloran, 2003a, pp. 18-21). The following is an example from (O'Halloran, 2003a, p. 13):

The *shooting dead* of 10 people today remind us all of the extent to which the Middle East crisis has escalated recently.

As can be seen from the example above, the Agent is omitted with the result that the readers cannot identify from the report who did the shooting.

Regarding these characteristics of nominalisation as grammatical metaphor, learners of English have to be very careful when they write or read to see if enough information has been provided. They have to pay attention also to the fact that nominalisation may distort or mystify the representation of an event or process.

3.5.4. Summary

Grammatical metaphor as a non-congruent way of encoding language is characteristic of all adult discourse, written English and scientific writing. As foreign language learners, having an awareness of the grammatical features of the target language and learning how to use them to develop their spoken and written communication are more important. Regarding the analysis of the grammatical feature of grammatical metaphor in this section, two main types of grammatical metaphors - metaphor of mood (including modality) and metaphor of transitivity - were illustrated by giving examples to show how these features are related to spoken and written English. Moreover, the relationship between nominalisation and grammatical metaphor was examined and some consequences of using nominalisation as grammatical metaphor were also examined to arouse the attention of the foreign language learners when they employ grammatical metaphor in their writing.

CHAPTER 4. RESEARCH METHODOLOGY

4.1. Introduction

This study involves developing the English writing skills of Chinese tertiary students through teaching them **Systemic Functional Linguistics** (SFL). It is based on classroom teaching experience in a Chinese context. Thus it is important to develop suitable research approaches to ensure that the study will be applicable to the Chinese situations and can be used in teaching at other universities in China. This chapter will firstly give a general overview of the research study, and then introduce the research approaches, selection of participants and data gathering techniques. In addition, the ethical issues and the reliability and validity and triangulation of the research are also considered.

4.2. Research aims and objectives

This study is aimed at developing the writing skills of Chinese EFL tertiary students by examining the Systemic Functional Linguistics theory developed by Halliday and teaching these students the four SFL grammatical features - Theme and Rheme, lexical density, nominalisation and grammatical metaphor. As this study involves the teaching and learning processes, it is important to examine the differences in the students' writing before and after they have been taught the grammatical features and the effectiveness of teaching SFL grammatical features in the development of English writing skills amongst Chinese tertiary students. However, insights gained from the students' learning experiences which reflect the difficulties and problems they face and their progress during the learning process are much more important than the learning results. The teachers' views on teaching writing skills, the students' attitudes towards learning SFL grammatical features and pedagogical implications in

teaching are useful for understanding the actual teaching and learning context. In a sense, this study is to examine the suitability of teaching SFL to develop the writing skills of Chinese tertiary students, with focuses on the students' learning results and processes, the teachers' views on teaching English writing to Chinese tertiary students and the students' attitudes towards learning SFL grammatical features. In pursuit of the stated aim, this study has six main objectives:

1. To examine the suitability of teaching Systemic Functional Linguistics to develop the English writing skills of Chinese students. Two research aspects are the focus of this objective: (1) the students' understanding and application of SFL and its four grammatical features, and (2) the students' participation in SFL classroom activities.
2. To identify the differences in writing of the students before and after being taught the four grammatical features of SFL.
3. To examine the difficulties and problems in using the four grammatical features in the process of teaching and learning.
4. To investigate the students' views on learning SFL and its application.
5. To identify the effectiveness and pedagogical implications of using the four SFL grammatical features in teaching Chinese students English writing.
6. To investigate the teachers' views on teaching English writing to Chinese students.

4.3. Research methodology

Research methodology is the most crucial part in a study as it determines the quality of a study. The research terminologies such as research methodology, research method, research approach, research tools and research types are widely used in research methodology literature and they can create confusion. Therefore, it is necessary and important to have a clear understanding of the concepts of research terminologies as these are the basis of research. Research methodology is the approach, strategy and methods used in a research. The terms “method” and “approach” normally refer to the same thing and they are sometimes used interchangeably. These two terms have some common semantic features which are about “the way in which the research is viewed and carried out” (Yiemkuntitavorn, 2005). The term “approach” is oriented on theoretical or philosophical perspectives which influence and dictate the methods used in a research study. The term “method” concerns the tools used to carry out a research, such as questionnaire, interview, observation, experiment and text analysis. Research types include case study, action research, theoretical research and applied research.

Ethnography is a research method. Ethnographic study refers to the study of cultures and groups — their lifestyle, understandings and belief (Denscombe, 1998, p. 69). Ethnography is the systemic collection of data based on direct observation of a group when one becomes immersed in the activities of the group so that one is able to see things from the group’s point of view. One seeks not to give one’s interpretation to the actions or beliefs of the group’s activity but rather, seeks to explore and report from the members’ understanding about what they are doing. Observation, as a tool, is used when one observes recurring events or behaviours and makes a note of what one sees for later analysis. When selecting a method for the collection of data, certain research strategies reflect the use of certain research methods. However, as

each of the methods has its particular strengths and weaknesses, researchers should ask themselves which method is best suited to the task at hand and operate on the premise that, when choosing a method for the collection of data, it is a matter of “horses for courses”. Thus the use of proper research methods or tools strengthens the quality of a study. This study could be considered as an ethnographic research in the sense that the researcher spent many years in this context as a participant observer where the research is conducted. The researcher works and lives in the same social context with the participants. She is not just a participant observer but also a discourse member.

This research study combines both quantitative and qualitative research approaches to achieve its objectives. Rossman and Wilson (1984; Rossman & Wilson, 1991) suggest three broad reasons of combining quantitative and qualitative research approaches: (a) to enable confirmation or corroboration of each other via triangulation; (b) to elaborate or develop analysis, providing richer detail; and (c) to initiate new lines of thinking through attention to surprises or paradoxes, “turning ideas around” and providing fresh insight.

4.3.1. Qualitative approach and quantitative approach

Research is a systematic investigation to find answers to a problem (Burns, 2000). Traditionally research methodology is roughly divided into two main approaches: qualitative approach and quantitative approach.

According to Merriam (1998), qualitative research is an umbrella concept covering several forms of inquiry that help us understand and explain the meaning of social phenomena with as little disruption of the natural setting as possible. Other terms often used interchangeably are naturalistic inquiry, interpretive research, field study, participant observation, inductive research, case study, and ethnography.

Qualitative research is an effort to understand situations in their uniqueness as part of a particular context and the interactions there. This understanding is an end in itself, so that it is not attempting to predict what may happen in the future necessarily, but to understand the nature of that setting – what it means for the participants to be in that setting, what their lives are like, what’s going on for them, what their meanings are and what the world looks like in that particular setting – and is the analysis able to communicate that faithfully to the others who are interested in that setting. The analysis strives for depth of understanding (Patton, 1985).

Sherman and Webb (1988) mention that qualitative research is interested in understanding the meaning people have constructed, that is, how they make their sense of their world and the experiences they have in the world. Qualitative research “implies a direct concern with experience as it is ‘lived’ or ‘felt’ or ‘undergone’”. Eisner (1979) explains that, essentially, qualitative methods are concerned with processes rather than consequences, with organic wholeness rather than independent variables, and with meanings rather than behavioural statistics.

Quantitative research is a type of research in which the researcher decides what to study, asks specific and narrow questions, collects numeric data from participants, analyses these numbers using statistics, and conducts the inquiry in an unbiased, objective manner (Creswell, 2005). According to Yiemkuntitavorn (2005, p. 6), “the word ‘quantitative’ reveals something to do with number, chart, diagram, measurement and quantitative research is easily recognised through the conventional illustration of quantitative information. The most powerful tool of quantitative research is statistics, which is the universal language that quantitative researchers use to communicate with one another”. Quantitative approach has been the conventional approach to research in all areas of investigation, and it is often termed “nomothetic” and

assumes social reality is objective and external to the individual (G. D. Bouma, 2000).

4.3.2. Characteristics of qualitative research

Qualitative researchers are interested in understanding the meaning people have constructed. The key concern is to understand the phenomenon of interest from the participants' perspectives, not the researcher's (Merriam, 1998, pp. 6-7). The researcher is the primary instrument for data collection and analysis. The researcher is responsive to the context; he/she can adapt the techniques to the circumstances; the total context can be considered; what is known about the situation can be expanded through sensitivity to nonverbal aspects; the researcher can process data immediately, can clarify and summarise as the study evolves, and can explore anomalous responses (Guba & Lincoln, 1981). Qualitative research usually involves fieldwork. The researcher must physically go to the people, setting, site and institution (the field in order to observe behaviour in its natural setting). Qualitative research primarily employs an inductive research strategy. Typically, qualitative research findings are in the form of themes, categories, typologies, concepts, tentative hypotheses and even theories, which have been inductively derived from the data (Merriam, 1998). The product of a qualitative study is richly descriptive since it focuses on process, meaning, and understanding. Words and pictures rather than numbers are used to convey what the researcher has learned about the phenomenon. There are likely to be the researcher's descriptions of the context, the players involved and the activities of interest. In addition, data in the form of the participants' own words, direct citations from documents, excerpts of videotapes, and so on, are likely to be included to support the findings of the study (Merriam, 1998). Qualitative investigation can be seen in Barton and Lazarsfeld's (1969, p. 166) statement that "like the nets of deep-sea explorers, qualitative studies may pull up unexpected and striking things for us

to gaze on". Qualitative descriptions can play the important role of suggesting possible relationship(s), causes, effects, and even dynamic processes in school settings (G. D. Bouma, 2000). The major criticism placed on qualitative approach is that it has inadequate validity and reliability because of the subjective nature of qualitative data and its origin in a single context (G. D. Bouma, 2000).

4.3.3. Characteristics of quantitative research

Quantitative approach has the characteristics of precision and control. Control is achieved through the sampling and design and precision through quantitative and reliable measurement. Quantitative approach tests hypotheses through a deductive approach and the use of quantitative data permits statistical analysis which has a much firmer basis than the lay person's common sense or intuition or opinion. Quantification can become an end in itself rather than a human endeavour seeking to explore the human condition. It fails to take account of people's unique ability to interpret their experiences, construct their own meaning and act on these. Quantitative approach leads to the assumption that facts are true and the same for all the people all the time. Quantitative approach is not always objective, since subjectively it is involved in the very choice of a problem as worthy of investigation and in the interpretation of the results (G. D. Bouma, 2000). Quantitative approach data gathering is so procedurally orientated that it cannot capture the dynamism of meaning in human behaviour and social phenomena (Yiemkuntitavorn, 2005).

4.4. The research approaches of this study

As pointed out in the discussion above, both qualitative and quantitative approaches have their own strengths and weaknesses. In order to strengthen the validity and reliability of qualitative approach, to overcome the one-sidedness

of the subjective nature of qualitative data, to add dynamism of meaning in human behaviour and social phenomena to quantitative approach and to ensure triangulation and the truthfulness of the quantitative data, both the qualitative approach and quantitative approach are employed in this study which involved teaching SFL to develop the English writing skills of Chinese students.

According to the research objectives of the study, the suitability of teaching Systemic Functional Linguistics to Chinese students in order to improve their English writing is based on: (1) the students' understanding and the application of SFL and its four grammatical features; (2) the students' participation in the SFL classroom activities; (3) the differences in writing before and after being taught the four grammatical features of SFL; (4) the difficulties and problems in using the four grammatical features in the process of teaching and learning; (5) the students' views on learning SFL and their application; (6) the effectiveness and pedagogical implications of using the four SFL grammatical features in teaching Chinese students English writing; and (7) the teachers' views on teaching Chinese students English writing. In pursuit of these objectives, this study employs the following research types and methods: action research, quasi-experimental research method, questionnaires, informal interviews, classroom observation and analysis of the students' exercises.

4.4.1. Action research

This study is an action research. In action research, practical strategies have been used by researchers to explore a practical problem with the aim to find the solution to a problem and it has been used to address issues of classroom teaching for some time. Burns (2000, p. 443) defines action research as the application of fact-finding to practical problem-solving in a social situation with a view to improving the quality of action within it. It involves the collaboration and cooperation of researchers, practitioners and lay people.

In education, action research is the process through which teachers collaborate in evaluating their practice jointly, raise awareness of their personal theory, articulate a shared conception of values, try out new strategies to render the values expressed in their practice more consistent with the educational values they espouse, record their work in a form which is readily available to and understandable by other teachers, and thus develop a shared theory of teaching by researching practice (Elliott, 1991).

According to Mills (2000), action research in education has the following advantages:

- It is used to investigate any issues concerned and encourage change in the schools or in teaching.
- It promotes shared understandings and approaches.
- The actions are monitored, shared and developed by a group of people.
- Actions are refined and improved through the cycle of research.
- It encourages educators to reflect on their practices.
- It involves students, teachers, co-teachers, parents or others and they build trust and support.
- It promotes a process of testing new ideas.

Kurt Lewin (1946) describes action research as a spiral of steps. Each of which is composed of a cycle of planning, acting, observing and reflecting. This cycle will then move to the next cycle of re-planning, acting, observing, reflecting and the cycle continues. Lewin's action research spiral cycle is as follows:

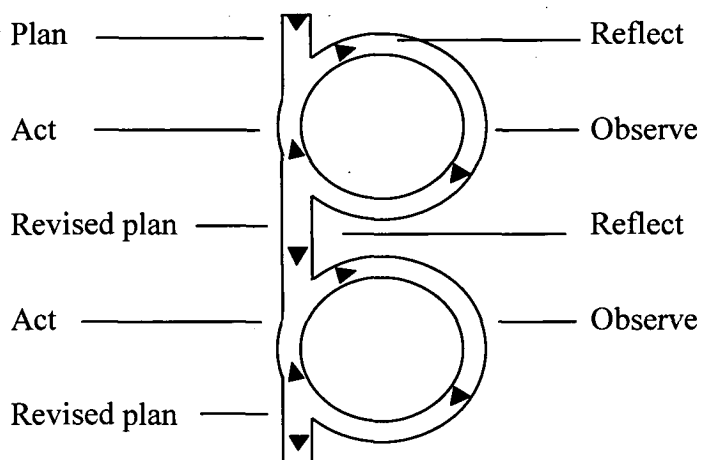


Diagram 4.4.1.: Diagram of action research spiral cycle

However, Lewin does not intend his ideas to be used in a specifically educational setting. Stenhouse (1975, p. 162), Ebbutt and Elliott (1985), Rudduck and Hopkins (1985), Macdonald & Walker (1974) have made a great contribution to establishing action research as an educational tradition.

... all well-found curriculum research and development, whether the work of an individual teacher, of a school, of a group working in a teachers' centre or a group working within the co-ordinating framework of a national project, is based on the study of classrooms. It thus rests on the work of teachers (Stenhouse, 1975, p. 143).

Based on Lewin's original concept, Kemmis has refined it considerably and together with Wilf Carr, he has applied the idea exclusively to education and has encouraged the use of the term "educational action research" (Carr & Kemmis, 1986). In Husen and Postlethwaite's *International Encyclopedia of Education: Research and Studies* (Kemmis, 1982), Kemmis's paper "Action research" outlines the principles and practice and "The action research planner" (Kemmis & McTaggart, 1982) gives detailed advice on using an action research approach to educational practice. In the "planner", the self-reflective

spiral of planning, acting, observing, reflecting, re-planning are taken as the basis for a problem-solving manoeuvre.

Action research process is owned and driven by teachers, students, co-teachers and others. Classroom teachers normally choose a focus, collect data, reflect on and share their findings, plan for action, carry it out, check their results and plan for further action. This cycle of steps - act, observe, reflect and plan – supports ongoing improvement, validated by collecting and evaluating local data. This cycle will be operated two or three times to finally solve the classroom teaching problems.

Action research has four defining characteristics (Denscombe, 1998):

- Practical: It is aimed at dealing with real-world problems and issues, typically at work and in organisational settings.
- Change: Change is regarded as an integral part of research, both as a way of dealing with practical problems and as a means of discovering more about phenomena.
- Cyclical process: Research involves a feedback loop in which initial findings generate possibilities for change which are then implemented and evaluated as a prelude to further investigation.
- Participation: Practitioners are the crucial people in the research process. Their participation is active, not passive.

Action research is concerned with the aims of research and the design of the research, but does not specify any constraints when it comes to the means for data collection that might be adopted by the action researchers. In a qualified action research, a systematic reflection is needed. Action research is not just problem-solving, it also involves problem-posing by a quest to improve and understand the world by changing it and learning how to improve it from the effects that has changed. Action research is research by practitioners

themselves on their own work and how they improve what they do and they must be participants.

Action research strategy is chosen in this research study because this research study focuses on developing Chinese tertiary students' writing proficiency by teaching students theoretical concepts of SFL. It is a classroom teaching process through which teachers and students collaborate in evaluating their teaching jointly, and teachers getting feedback from students. After having interacted with the students, raising awareness of their personal theory, developing new skills or new approaches or revising teaching plans and exercises to solve problems with direct application to the classroom teaching and learning or other applied settings, the teachers articulate a shared conception of values and try out new strategies to render the values expressed in their teaching practice. The teachers and colleague teachers observe while teaching and take notes of their work in a form which is readily available to and understandable by other teachers and thus develop a shared theory of teaching by researching practice. The cycle of these acts repeats several times until the students can understand and put the SFL theoretical concepts into effective practice.

The methods used in action research in this study include reflection and observation of the classroom teaching; exploration and test new ideas, methods, and materials; assessment of the effectiveness of the new approaches; sharing feedback with fellow team members; and making decisions about which new approaches, instruction, and assessment plans. These enable triangulation of multi-methods, multi-persons (control group and experimental group students at three different language proficiency levels) and multi-sites (students on different campuses).

4.4.2. Quasi-experimental research

This study could be treated as quasi-experimental research. Quasi-experimental research strategy focuses on a study which has different levels of treatments, and people or groups without random assignment. Quasi-experiment research strategy approximates the conditions of the true experiment in a setting which does not allow the control and/or manipulation of all relevant variables. The researcher must clearly understand what compromises exist in the internal and external validity of his design and proceed within these limitations (Stephen & William, 1981).

In this research study, the researcher uses the quasi-experimental design (D. T. Campbell & Stanley, 1966) for reference, and divided the participants into three different levels (elementary, intermediate and advanced)(the qualifications of the three levels are discussed in Section 4.6.1.) and there are two groups (experimental and control/comparison group) in each level. The experimental and control group students are located on different campuses. The data were collected before and after the SFL teaching. The experimental groups at all three levels were taught the SFL and the results of the experimental group are compared to the control group who have no SFL training in order to identify the effectiveness of SFL teaching, the difficulties faced by the students, the differences between the two groups before and after being taught SFL and whether the students' writing skills have greatly improved after learning SFL. The quasi-experimental research design is shown in Table 4.6.1b.

4.4.3. Informal interview

Included in a range of research data collection, informal group interviews were also conducted in this study. To explore the informants' experiences, interview is a useful way of getting information. Michael Agar (1980) suggests that

information from interviews can serve as the “methodological core” against which observational data can be used to “feed” ongoing informal interviews. Researchers such as Wakeford (1981) point out that rather few field studies actually adhere to the structured approach. Unstructured (“informal”) or semi-structured interviews are prevalent, partly because of the attraction of allowing the interviewees to develop their answers in their full complexity outside any pre-structured format. According to Moser and Kalton (1971), interviews are “focused”, and consist of a series of open-ended factual and opinion questions. Taylor and Bogdan (1984, p. 77) define open-ended interviews as “repeated face-to-face encounters between the researcher and informants directed towards understanding informants’ perspectives on their lives, experiences or situations as expressed in their own words.” According to (Burns, 2000), informal interview has the following advantages:

- With the contacts being repeated, there is a greater length of time spent with the informant, which increases rapport.
- The informant’s perspective is provided rather than the perspective of the researcher being imposed.
- The informant uses language natural to them rather than trying to understand and fit into the concepts of the study.
- The informant has equal status to the researcher in the dialogue rather than being a guinea pig.

Taking into account the advantages and the characteristics of the open-ended interview, the researcher in this study makes an effort to avoid using leading questions to gather information that the researcher cannot obtain from the task-based data, questionnaire data and classroom observation data. Informal interviews are undertaken as they give interviewees enough flexibility to develop their views and speak more widely on the related questions raised by the researcher. In this study, interviews were conducted with three English teachers in the English Department of the Taiyuan Teachers College and six

students who have experienced the whole process of SFL learning. Interviewing these teachers is important because of their teaching experience and their familiarity with the students. Obtaining students' views from interviews is also very helpful to gather further information and their views on SFL and the application of its grammatical features. The six students are purposely chosen from the different levels with two from each level. As part of the official procedures, before the interviews, letters were sent to the department to seek its approval and collaboration and to individual interviewees to obtain their permission.

4.4.4. Questionnaire

Questionnaires are used for data collection in this study. Questionnaires are regarded as an invaluable and indispensable method for grasping teachers' understanding of and attitudes to an innovative project, since exclusive focus on teachers' classroom practices may reveal that teachers exhibit "desirable" behaviours but by no means proves that teachers understand the principle underlying them (Fullan & Pomfret, 1977; Gebremedhin & Tweeten, 1994). Questionnaire data is distinct from that which can be obtained from interviews, observation or documents and the information from questionnaires tends to fall into two broad categories of "facts" and "opinions" (Denscombe, 1998). It is very useful and purposeful when questions and instructions asked are simple. Questionnaires that can guarantee confidentiality may elicit more truthful responses than would be obtained with a personal interview. However, with questionnaires, there is no opportunity to acquire supplementary observational data. The complex instruments, ambiguity or vagueness will cause poor responses (Burns, 2000). As one of the major survey methods, questionnaire survey is also employed in this study because the researcher attempts to obtain factual responses from students regarding their general understanding of and views on SFL. The researcher also wants to examine the students' attitudes

towards the effectiveness of applying grammatical features because questionnaires can greatly facilitate the summarisation and analysis of the data collected.

4.4.5. Classroom observation

This study also includes observation as a data collection tool. Observation is one of the crucial steps in action research cycle because to see how students behave in class helps to obtain information which enhances the revision of the teaching plan for the next teaching step. According to the action research circle, researchers should not rely only on single-sourced data, interview, observation, or instrument. Pairing observation and interviews provides a valuable way to gather complementary data. Zelditch's argument (1962), and Trow's (1957) with Becker and Geer (1957; 1958) suggest that the need to interrelate data is actually inherent in field methodology, because a field study is not a single method gathering a single kind of information. One of the advantages of employing multiple research methods within a particular study is that the findings of each method can be cross validated, which in turn can be used for establishing and strengthening the validity of the research instruments and the theoretical assumptions the study is based upon (Sieber, 1982). Hopkins (1993, p. 100) proposes two types of observation: structured observation and unstructured observation. Structured observation is an observation which counts frequency of the behaviour of the subjects observed. Usually the researcher uses a check list to observe the behaviour of the subjects. Unstructured observation on the other hand is an observation which records only the relevant data in accordance with the focus of research. This means that the researcher recorded anything which was relevant to the focus of the study through classroom observation. Unstructured observation is undertaken in this research study to collect data from different angle because the researcher

focuses mainly on the students' involvement in the classroom activities in order to observe the students' interest in learning SFL.

4.4.6. Students' exercises as learning experience

The formalisation of the theory of constructivism (Piaget, 1950) suggests that knowledge is internalised by learners. Piaget also mentions that through processes of accommodation and assimilation, individuals construct new knowledge from their experiences. Assimilation occurs when individuals' experiences are aligned with their internal representation of the world. They assimilate the new experience into an already existing framework.

Accommodation is the process of reframing one's mental representation of the external world to fit the new experiences. Accommodation can be understood as the mechanism by which failure leads to learning. On the basis of the theory of the constructivism, it is important for this study to examine how the students' learning actually takes place and whether they are using their experiences to understand a lecture and construct knowledge. The students' exercise is one of the main aspects of reflecting their learning process and understanding of the grammatical features. It also sheds light on the effectiveness of SFL teaching in developing the students' writing skills, the problems and difficulties faced by the students in using the SFL features and also the reasons why they can or cannot use the features properly.

4.5. Ethics of the research

The researcher is aware that this study deals with human participants and there are ethics requirements to ensure that no one would suffer as a result of participation in the study. The researcher is also aware that the activity of action research almost inevitably affects the participants. Therefore, firstly, the researcher obtained the permission from the participants before making

classroom observations and assigning the students pre-teaching exercises. Secondly, the researcher has tried to keep the classroom teaching process visible and has been open to suggestions from others. Actually the classroom teaching is the normal classroom teaching environment that the students are used to. The students' feedback and the teaching plans have been renegotiated from time to time according to the students' requirements. Thirdly, the experimental and control groups are on different campuses. As Linguistics is one of the main subjects of the English-major students, SFL teaching to the experimental groups will definitely broaden their understanding of linguistics. SFL teaching to the experimental groups has been conducted as part of the teaching. The control group students had their normal study as usual. Instead of sitting for a formal writing test, students were asked to write in the class in a very casual atmosphere with a view to maintain their confidentiality. This in fact encourages the students to participate in the classroom activities without any loss of self-esteem or anxiety. All the pre-teaching and post-teaching writing data are securely kept at the Faculty of Education, University of Tasmania. It is ethical to inform potential participants of the purpose of the study and to obtain their agreement to participate. Therefore, ethics application for the approval to conduct the research had been sent to the Northern Tasmania Social Sciences Human Research Ethics Committee before conducting the research.

Another point worth mentioning is that the teacher performed the roles of both a SFL teacher and a researcher. According to action research, the teacher is nominally somebody other than the researcher himself/herself. However, the fact was that the teachers in the English Department of the Taiyuan Teachers College had no awareness of SFL. Therefore, the research could not have been conducted if the researcher had not acted as a teacher herself. On one hand, it might influence data collection and classroom observation. On the other hand, it is productive for the researcher to involve in the real teaching situation to directly get information or feedback from the participants. The teacher

researcher experienced the whole teaching process and understands the discourse of teaching and learning. Students might feel uncomfortable when they made mistakes or had difficulties or problems during the learning process. However, the teacher researcher has tried her best to understand the students' feelings and given them an appropriate guidance and help. In addition, the researcher is the teacher in the English Department and the students are quite familiar with her and have close interpersonal relationship with the teacher researcher. In order to obtain more information about the students including the control group students, the researcher interviewed their former teachers for the purpose of evaluating the writing exercises more objectively.

4.6. Data gathering

According to Johnson and Hatch (1990), the design of qualitative projects must include a description of what the data of the study will be and how it will be collected. This research study involves teaching SFL grammatical features to develop Chinese tertiary students' English writing skills. Both qualitative and quantitative research methods are employed in order to achieve the purpose of the study. It is very important to identify who the participants are, how the teaching is conducted and what, how and why data is collected.

4.6.1. Participants

This research involves 180 students. They are students in the English Department of the Taiyuan Teachers College, Shanxi Province, P. R. China. They are English-major students who have passed the National Entrance Examination and they are undertaking a four-year English language course in the college and they will be middle school English teachers after graduation.

The students in this research study are chosen through purposive and opportunity selection. Purposive sampling is selected as the most appropriate method for determining the participants in the research project (G. D. Bouma & Ling, 2004), as the researcher has used her personal judgment to select the suitable participants for her research. There are several reasons why these students are chosen to participate in this study. Firstly, they are all English-major students in the university who have studied in the English Department for more than one year and their English level is much higher than the non-English-major students. It is also easier for the researcher to undertake this study because, basically, the students' English level must be high enough to understand Halliday's SFL theory so that they can use it in EFL (English as a Foreign Language) writing afterwards. Secondly, Linguistics is one of the main subjects for the English-major students and SFL study will definitely broaden their understanding of linguistics. Thirdly, the students are located on two different campuses and it is more convenient for the researcher to divide the students into control and experimental groups without having to make unnecessary rearrangement. The research has neither changed the teaching syllabus nor increased the students' work load. Fourthly, all the participants will become EFL teachers after graduation and their teaching idea, linguistics and SFL knowledge will have great influence in their study and teaching in the future.

These students are sampled because they are the most convenient for opportunity samplings to be selected. It is convenient because the researcher is an EFL teacher in the English Department of the Taiyuan Teachers College and the participants are her students and they are the most readily available sample groups. Burns (2004) mentions that this happens when, due to constraints of finance and even permission, research is carried out on conveniently accessible groups, such as students in one's own college, people living in your neighbourhood, etc. In this technique, certain criteria are determined at the outset and a deliberate attempt will be made to include these criteria in the

chosen samples. Certain requirements are set on the participants before the research: (1) Their English level must be high enough to understand SFL theory. (2) It will be very easy to divide them into three levels: the elementary, intermediate and advanced level. Overall, the purposive and convenient or opportunity samplings are deemed the most appropriate and effective approaches for this research. The numbers of participants from the experimental and control groups in each level are determined as below.

Table 4.6.1a.: *The division of the participants in each group and level*

Level	Experimental Group	Control Group
Elemental	30	30
Intermediate	30	30
Advanced	30	30

According to Table 4.6.1a, the participants are divided into two groups (an experimental group and a control group) and further into three levels (elementary, intermediate and advanced). There are 30 students in each group at each level.

Table 4.6.1b.: *The quasi-experimental research design of the experimental and control groups*

Level	Number	Group	Pre-teaching Test	SFL teaching	Post-teaching Test
Elementary	30	C	W1	O	W2
	30	E	W1	X	W2
Intermediate	30	C	W1	O	W2
	30	E	W1	X	W2
Advanced	30	C	W1	O	W2
	30	E	W1	X	W2

C: Control group

E: Experimental group

X: SFL teaching

O: No SFL teaching

W: Writing exercise

Table 4.6.1b is the quasi-experimental research design (D. T. Campbell & Stanley, 1966). According to the design, the participants will have the pre-teaching (W1) and post-teaching (W2) writing tests. After the pre-teaching (W1) test, the experimental groups (E) at all three levels will have the SFL lessons (Treatment/X). Finally the pre-teaching (W1) and post-teaching (W2) data will be conducted. However, the control group participants (C) at all three levels will have no SFL lessons (O).

According to the research design of this study, the participants are divided into two main groups: experimental and control groups. Each group has 90 students which are further divided into three levels: elementary, intermediate and advanced level. Each level of both experimental and control group has 30 students. The division of the three levels is as follows:

- Elementary level (E): students who have not passed the Grade 4 test for English majors (TEM 4);
- Intermediate level (I): students who have passed TEM 4;
- Advanced level (A): students who have passed TEM 8.

(Note: English-major university students in China have two tests, TEM 4 and TEM 8, to evaluate their English levels.)

4.6.2. Study design of the experimental group

Table 4.6.2.: *The study design of the experimental group*

Student Level	Number of Students	Pre-teaching writing	SFL teaching 48 hours	Post-teaching writing	Writing comparison
Elementary	30	Narrative essay (1) Exposition (1) (200 words)	Introduction of SFL Theme and Rheme Lexical Density Nominalisation Grammatical Metaphor	Narrative essay (2) Exposition (2) (200 words)	(1) and (2) Narrative (1) and (2) Exposition
Intermediate	30	Narrative essay (1) Exposition (1) (200 words)	Introduction of SFL Theme and Rheme Lexical Density Nominalisation Grammatical Metaphor	Narrative essay (2) Exposition (2) (200 words)	(1) and (2) Narrative (1) and (2) Exposition
Advanced	30	Narrative essay (1) Exposition (1) (200 words)	Introduction of SFL Theme and Rheme Lexical Density Nominalisation Grammatical Metaphor	Narrative essay(2) Exposition (2) (200 words)	(1) and (2) Narrative (1) and (2) Exposition

4.6.3. Study design of the control group

Table 4.6.3.: *The study design of the control group*

Student Level	Number of Students	Pre-teaching writing exercise	Normal teaching 48 hours	Post-teaching writing exercise	Writing comparison
Elementary	30	Narrative essay (1) Exposition (1) (200 words)	Normal teaching	Narrative essay (2) Exposition (2) (200 words)	(1) and (2) Narrative (1) and (2) Exposition
Intermediate	30	Narrative essay (1) Exposition (1) (200 words)	Normal teaching	Narrative essay (2) Exposition (2) (200 words)	(1) and (2) Narrative (1) and (2) Exposition
Advanced	30	Narrative essay (1) Exposition (1) (200 words)	Normal teaching	Narrative essay(2) Exposition (2) (200 words)	(1) and (2) Narrative (1) and (2) Exposition

The interpretation of Table 4.6.2.: The study design of the experimental group and Table 4.6.3.: The study design of the controlled group is undertaken in Tables 4.6.5. and 4.6.6.

4.6.4. Stages of data collection

Data collection in this study is staged as follows:

Table 4.6.4.: *The stages of data collection*

Stage	Tasks
Stage 1	Prepare for / Collect first data set <ul style="list-style-type: none">• Create procedures for the SFL teaching program• Develop contacts with students and dean who will involve in the experiment• Develop a comprehensive SFL teaching plan for the experiment
Stage 2	Finalise agreement with students and the dean who will involve in the experiment
Stage 3	Prepare SFL teaching material <ul style="list-style-type: none">• Narrative and expository writing• Introduction of SFL• Theme and Rheme• Lexical density• Grammatical Metaphor• Nominalisation
Stage 4	SFL teaching and task-based data collection <ul style="list-style-type: none">• Collect first data set• Analyse initial data• SFL teaching• Collect second data set• Analyse the second set of data
Stage 5	Non-task-based data collection <ul style="list-style-type: none">• Questionnaire survey• Informal interview• Sort out the classroom observation notes• Sort out data collected and prepare for full data analyses
Stage 6	<ul style="list-style-type: none">• Task-based and non-task-based data analysis• Review entire data analyses• Start writing data chapters

4.6.5. Description of the process teaching the experimental groups and the pre-teaching and post-teaching data collection (Research Objective 2)

As far as the participants are concerned, agreements have been signed by them to participate in the SFL teaching experiment. In order to describe how the action research is conducted, it is important to show the teaching process. The SFL teaching experience includes the following three steps: pre-teaching writing, SFL teaching, and post-teaching writing.

- ***Step 1: Pre-teaching writing***

Pre-teaching writing refers to the exercise written by the students in both experimental and controlled groups before SFL teaching. In order to keep the experimental group students at equal level with the control group students, the teacher gave no more information or instruction than what it was said on the writing paper. The students were required to write a narrative essay with a topic “My Father” or “My Mother” and an exposition essay with the topic “High-level Jobs for Women” in 60 minutes each of at least 200 words. This exercises become the pre-SFL teaching data.

- ***Step 2: SFL teaching***

After the completion of a narrative and an expositive essay, each level subgroup was given SFL lessons separately. The lessons consisted of five units: Unit1: Brief Introduction of SFL; Unit 2: Theme and Rheme; Unit 3: Lexical Density; Unit 4: Nominalisation; and Unit 5: Grammatical Metaphor. There were generally five steps in the teaching of each unit.

Step 1: The explanation of the grammatical features;

- Step 2: Illustration by using as many examples as possible to help students master the grammatical features;
- Step3: Classroom discussion or pair work or group work;
- Step 4: Graded exercises designed to build students' skills in grammatical analysis of each feature; Step 5: Students' feedback and further exercises.

The teacher adjusted her teaching from time to time during the teaching process to accommodate the students' needs. For example, when they have learnt Theme and Rheme and thematic progression feature, the students might not use them in their writing. In this case, the teacher would ask the students to start with simple clauses or short paragraphs and ask them to find out the Themes and Rhemes in the current clause and the previous clause. She would then help them find out the connections between the clauses and help them make the clauses or short paragraphs more coherent. Alternatively, the students might be asked to revise their original writing bearing in mind the grammatical features they have learnt. Later on, the students gradually develop awareness in applying the grammatical features in their writing.

The exercises are carefully designed to facilitate the students in mastering the grammatical features. The students' exercises are one of the most important demonstrations of the students' learning process and from which the researcher can identify clearly actual learning and teaching situation. Two to five different kinds of exercises are designed after the students are taught each feature to help them understand the grammatical features, strengthen what they have learnt and help them use the features in their writing. The students' exercises may be changed to suit the different levels and the students' learning situation. The exercises may also be changed in response to the students' feedback and reflections in the classroom to meet the different requirements of

the students. The following exercises are the general exercises for each feature. They are in the following forms:

Theme and Rheme

1. Please identify and underline the Themes in the following clauses.
2. Identify the Topical Theme and classify as unmarked or marked.
3. According to the patterns of thematic progression we have learnt in this unit, rearrange each group of the following clauses to make it a coherent and logical paragraph and then draw in a diagram the thematic pattern of the paragraph.
4. Please write a paragraph with at least 4 clauses and then draw the thematic pattern in a diagram.

Lexical density

1. Identify the content words and function words in the following clauses.
2. Calculate the ratio of the content words to the total number of words in the clauses. Underline the content words and then write down the ratio of each clause.
3. Read the clauses below and then underline the number of content words in each clause and work out how much information there is in this particular piece of writing or how much information has been packed into one clause.
4. Please read the following clauses and count the total number of words and the number of content words and then calculate the lexical density of each clause.

5. Write two sentences which are lexically dense and where the lexical density is higher than 42%.

Nominalisation

1. Please nominalise the following clauses.
2. Please identify the active verbs in the following clauses and then rewrite the following clauses by nominalising the main verbs of the clauses.
3. Here is an extract from a biology report. Nominalisation has been used frequently in this passage, creating a more academic and abstract tone. Please underline the nominalisation of the verb phrases in this passage.
4. Please read the following two pieces of writing and then underline the use of nominalisation in each piece and then tell the difference in formality between the two texts.

Grammatical metaphor

1. Please indicate whether the following clauses are congruent or metaphorical.
2. Translate the following clauses into English by using nominalisation or grammatical metaphor.

• Step 3: Post-teaching writing

After SFL teaching, each level sub-group will have a revision of the SFL grammatical features and then write a narrative essay with the topic “An Unforgettable Experience” and an exposition essay “Saving Money” in 60

minutes and each essay should have at least 200 words. These will become the post-SFL teaching data.

4.6.6. Description of the teaching process of the control groups

Regarding the control groups at the three levels, they have had their normal lessons with their original teachers in the English department. They were not given any extra lessons in relation to SFL which the experimental groups have been taught. In order to investigate the effectiveness of SFL teaching and the differences between the experimental and controlled groups, they were also required to write a narrative and an exposition essay with the same topics, on the same dates and times (i.e., the dates when the experimental group had their pre-teaching writing and post-teaching writing exercises.). The data collected from the control groups is compared with the data collected from the experimental groups.

4.6.7. Students' exercises data (Research Objective 3)

Students' exercises data of the experimental groups at the three levels who have been taught SFL is collected after each grammatical feature lesson to test the students' SFL awareness and their application. After teaching each grammatical feature, the teacher researcher gave the students exercises to strengthen what they have learnt in class. During the exercise class discussion, they were required to correct their exercises in red so as to let the researcher see their mistakes and problems for the purpose of data analysis. The students' exercises include four sections: Theme and Rheme, lexical density, nominalisation and grammatical metaphor.

4.6.8. Questionnaires data (Research Objective 1-(1))

The importance of collecting data from a variety of sources to fully understand the effect of the teaching and learning outcomes should be noted. For this purpose, a survey in the form of a questionnaire has been conducted in order to find out the “facts” about the students’ general understanding of SFL and their attitudes and views towards the effectiveness of applying grammatical features in the development of writing skills. The survey involves 90 students in the experimental groups at the three levels and it was carried out in the participants’ classrooms after the last SFL lesson with agreement from both the dean and the participants. The 90 students in the experimental groups at the three levels are the respondents because they are the persons who have been involved in the real learning situation and who have experienced the whole SFL learning process. Definitely they are the right persons to research on. A well-planned and carefully constructed questionnaire will increase the response rate and will also greatly facilitate the summarisation and analysis of the data collected (Burns, 2000). In order to make the questionnaire more valid, the researcher has tried to put the study title in bold type on the first page of the questionnaire so that the respondents can have a clear idea of what they are asked to do. The researcher has also attempted to make the statements or questions clear and simple to understand and put the simple and general items at the beginning of the questionnaire to give the respondents a warm up, and most importantly, the researcher groups the items into logical coherent sections for different topics. In response to the research objectives of the study, the questionnaire is divided into three parts and 22 items.

Part 1: Students’ general information

Part 2: General understanding of SFL (Items 1-16)

Part 3: Students’ attitudes towards SFL and the application of its four grammatical features (Items 1-6)

Closed items and scale items are used in the questionnaire.

For items 1-16, please circle the response that most closely reflects your opinion (T-3 stands for True, NS-2 for Not Sure and F-1 for False).

Table 4.6.8a.: *Sample of a closed item questionnaire*

Item No	Items	T 3	NS 2	F 1
5	Theme functions as the “starting point for the message”, the element which the clause is going to be “about”.	3	2	1

For Items 1-6, please circle the response that most closely reflects your opinion (SA-5 stands for Strongly Agree, A-4 for Agree, NS-3 for Not Sure, D-2 for Disagree and SD-1 for Strongly Disagree).

Table 4.6.8b.: *Sample of a scale item questionnaire*

Item No	Items	SA 5	A 4	NS 3	D 2	SD 1
1	Theme theory is not difficult to understand.	5	4	3	2	1

The closed item questions have the advantages of achieving greater uniformity of measurement and therefore greater reliability and it is easily coded. The scale items are a set of verbal items to which the respondent responds by indicating the degree of agreement or disagreement and it is easy to complete.

In order to maximise the return of the questionnaires, the surveys are conducted in the afternoon right after the SFL classes of the three levels. Each survey session lasts 30 minutes and the questionnaires are collected and kept in sealed envelops for future data analysis. A sample of the questionnaire sample is shown in the Appendix.

4.6.9. Informal interview data

The informal interview data include the transcripts of the interview with three teachers and six students. In this study, the informal interviews were conducted in groups. Lewis (1992, p. 413) notes that group interviews have several advantages over individual interviews. In particular, they help to reveal consensus views, may generate richer responses by allowing participants to challenge one another's views, may be used to verify research ideas of data gained through other methods and may enhance the reliability of responses. The detailed reflection of the teachers on their experience in teaching English writing, language expressions in writing, spoken and written English, typical mistakes made by Chinese students in English writing, academic writing, Chinese thought patterns and language base are reported. The students' informal interview data focuses on their reflection of the general understanding of SFL, difficulties and problems, interests in learning SFL and its effectiveness in improving their writing skills. The data are grouped into themes according to the responses of the open-ended interview questions.

4.6.9.1. The interview process

As mentioned above, the interviews are informal and conducted in a free and very relaxed atmosphere. The teachers' interview was undertaken in the afternoon during their free hours in one of the teachers' office with afternoon tea. The researcher started the informal interview with the teachers talking about the research study and what research they have conducted and later on moved to the topic of teaching English writing with regard to the aspects which challenge the students in their daily English writing such as typical grammatical mistakes in writing, cohesion and coherence, cultural difference, spoken and written English, academic writing, current problems in the teaching

of English writing and the reflection of the teachers on their experience in teaching English writing.

The students' interview was conducted in the late afternoon in a classroom after classes. The classroom was very quiet at that time without any interruption and the students seemed to be relaxed after a whole day of lessons and it was the right time to talk with the students. They were happy to share their learning experience with the researcher. The students at the interview started the conversation by asking questions about the researcher's life, her study overseas and this research. It is quite good to communicate with the students about the research. The talk gradually moved on to the research questions about their views on SFL learning. This includes their feelings, attitudes, reflections, understanding of the theory and its application, difficulties and problems they face and its effectiveness. The questions were very open-ended with no limitation of time and ideas; however, what the researcher had tried best was to let each interviewee have a chance to talk and direct the focus on the research questions.

The teachers' interview went on smoothly because they all have had interview experiences and they were serious in conducting the interview and most importantly they are very familiar with the area they were talking about. Regarding the students' interview, the researcher at times had to get the students focus on their points by using techniques such as asking questions or getting from different students their views on the same points to obtain as much information as possible.

The interviews were recorded using a Panasonic Walkman with a microphone extension, and were later transcribed and translated. In order to help the teachers and students express themselves freely, the interviews were conducted in the mixed medium of English and Chinese to make them feel comfortable with their expressions and ideas. The research also took notes of the interviews

as much as possible during the interviews. The notes record not only what each teacher or student have talked about but also who have talked in the interviews. The teachers and the students interviewed are coded as T1 (Teacher one), T2 and T3 and S1 (Student one), S2, S3, S4, S5 and S6. The interviews typically lasted for two hours but each individual had different share of time depending on the degree of the information they gave.

The interviews are recorded, transcribed, translated and sorted out according to the codes used by the researcher. As the interviews were informal and the researcher had chances to clarify at times some information and noted them down, it helps to avoid misunderstanding of the information given by the interviewees. After transcribing and translating the interview data, the researcher categorises teachers' and students' information into themes in relation to the Research Objectives 4 and 6. The interview data were analysed immediately after the interview. Themes are showed as followed:

- ***Teachers' views***

Theme 1: Typical grammar mistakes in writing

Theme 2: Cohesion and coherence

Theme 3: Cultural difference and English writing

Theme 4: Spoken and written English, and academic writing

Theme 5: Current problems in the teaching of English writing

- ***Students' reflection and feedback***

Theme 1: Attitudes towards SFL

Theme 2: The reflection and views on the four SFL grammatical features

- The reflection and feedback on Theme and Rheme
- The reflection and feedback on lexical density

- The reflection and feedback on nominalisation
- The reflection and feedback on grammatical metaphor

4.6.10. Classroom observation data

Classroom observation data were gathered from observing the students' classroom discussions and their involvement in the activities. Apart from questionnaire survey data, informal interview data and other data collected in the teaching process, the researcher also uses the classroom observation as supplementary data to satisfy the triangulation. Teacher researchers have countless opportunities to observe their class constantly and adjust their teaching based on what they see. As the study is to develop the students' writing skill by teaching them SFL grammatical features, it is important to focus the observation on what happens in class such as the students' questions in relation to the understanding of the features, the students' reflections in class, their discussions and involvement in the teaching activities, rather than on the classroom environment and what the students do every five minutes. In this case, the classroom observation notes are about the typical events in the class which give a close picture of the students' involvement in class. Four observation notes are selected to demonstrate the classroom activities in relation to the different units covering the four grammatical features. Classroom observation focuses on the four typical categories is illustrated as follows:

Table 4.6.10.: *Four typical classroom observation information*

Observer	Time and Date	Level of Students	Content
The teacher researcher	3:30-6:30pm. 25th Sept. 2006 (Monday)	30 elementary level students in the experimental group	Unit 2 Section 3: Theme and Rheme (Thematic progression)
The teacher researcher	3:30-6:30pm. 11th Oct. 2006 (Wednesday)	30 intermediate level students in the experimental group	Unit 3 Section 4: Lexical density
The teacher researcher	3:30-6:30pm. 10th Nov. 2006 (Friday)	30 advanced level students in the experimental group	Unit 4 Section 5: Nominalisation
The teacher researcher	3:30-6:30pm. 8th Dec. 2006 (Friday)	30 advanced level students in the experimental group	Unit 5 Section 5: Grammatical metaphor

Each classroom observation notes have eight parts: (1) brief introduction of the context; (2) teaching steps; (3) general understanding of what has been taught; (4) students' reflection and feedback; (5) teacher's reflection; (6) problems and difficulties in class; (7) students' interests; and (8) classroom discussion. The classroom observation data focuses on classroom discussions, including questions, conversations and activities which reflect the students' involvement in the classroom activities and the students' interest in learning SFL. The classroom observation notes are shown in the Appendix.

4.6.11. Data collection

The whole data collection process lasted for a semester (48 teaching hours), from early September to the end of December, 2006 which was the first semester of the 2006-07 academic year of the Taiyuan Teachers College. Each

level cohort had 3 hours of lessons every week. Sagor (1992, p. 45) has suggested that action researchers complete a data collection plan that identifies at least three “independent windows for collecting data on the question being investigated”. Wolcott (1988) also mentions that the strength of qualitative research lies in its triangulation, collecting information in many ways rather than relying solely on one. In this case, a single source of data is not enough to achieve the objective of the study and to satisfy triangulation. On the basis of these, the data collection in this study covers various aspects including task-based data and non-task-based data. The task-based data refers to the data with an explicit focus on the students’ writing skills before and after being taught SFL grammatical features, which involves the writing of a narrative and an exposition essay, with special topics to demonstrate their awareness of the grammatical features they have learnt for the purpose of writing development. Data of the students’ exercises are also task-based because they are driven by a task for the purpose of improving the individual’s writing competence based on purposeful exercises related to the grammatical features of SFL. In addition, non-task-based data from questionnaires, the teachers’ and students’ informal interviews and classroom observation notes are also collected. The task-based data include 720 copies of the narrative and exposition essays before and after the teaching of SFL for both experimental and control groups at all three levels, and 360 copies of the students’ SFL exercises. The non-task-based data include 90 copies of the questionnaire, responses from the three teachers and six students at the informal interviews and four classroom observation notes. The details are summarised as follows:

Table 4.6.11.: *Data gathered*

Data type	Data number
<p>1. Pre-teaching writing</p> <p>This includes the narrative and exposition essays written by the experimental and control groups at all three levels.</p>	There are 360 samples.
<p>2. Post-teaching writing</p> <p>This includes the narrative and exposition essays written by the experimental and control groups at all three levels.</p>	There are 360 samples.
<p>3. Students' exercise</p> <p>This includes the students' exercises during the teaching of each SFL feature of Theme and Rheme, Lexical density, Nominalisation, and Grammatical metaphor. The effectiveness of SFL teaching and the learning problems faced by the students are examined through the students' exercises.</p>	There are 360 samples.
<p>4. Questionnaire</p> <p>It is a Likert scale survey about the students' general understanding of SFL and application of its grammatical features and their attitudes towards SFL learning.</p>	There are 90 copies. The questionnaire covers 22 items.
<p>5. Informal interview</p> <p>Three teachers who teach writing in the English Department of the Taiyuan Teachers College were interviewed. The interviews were opened-ended with focuses on the teachers' views on syntax, lexis, spoken and written English, the typical mistakes Chinese students made when writing English, academic writing, Chinese thought patterns, language base and so on.</p> <p>Six experimental group students from the three levels were interviewed. The interviews were also very informal to gauge the students' reflection and feedback on their general understanding of SFL, difficulties and problems they face, their interests in learning SFL and its effectiveness in improving their writing skills.</p>	3 teachers and 6 students.
<p>6. Classroom observation note</p> <p>The classroom observation notes include what the researcher saw and heard in the classes. It mainly focuses on the students' participation in the classroom activities as a reflection of their involvement and interests in learning SFL.</p>	4 typical classroom observation notes.

4.7. Reliability, validity and triangulation of the research

Reliability measures the subjects' level of performance by checking that they are not hindered by various factors such as motivation and mood (Burns, 2004). Reliability is based on two assumptions. The first is that the study can be repeated. Other researchers must be able to replicate the steps of the original research, employ the same categories of the study, the same procedures, the same criteria of correctness and the same perspectives. The second assumption is that two or more people can have similar interpretations by using these categories and procedures (Burns, 2000, p. 417).

Validity refers to the relevance and accuracy to what is measured. There are two broad types of validity: internal and external. Internal validity refers to whether the tests measure accurately what they are designed to measure. External validity refers to the extent to which your findings can be generalised to other people, or situations, or at other times (Trochim, 2000).

Validity and reliability are the goals of any scientific research, but reliability is the limiting factor in determining validity. To deal adequately with the research problem, the possibility of employing more than one method stems from the fact that the various methods contain their own set of assumptions about the nature of the social world and the kind of data that can be produced to increase knowledge about the world (Denscombe, 1998, p. 84). Different tools used in data collection give different types of data. Interview, for example, is a qualitative research method, involving a set of assumptions and understandings about a situation, in which researchers explore the informants' experiences and interpretations through special kinds of conversations or speech events (Denscombe, 2001; Mishler, 1986). However, data collected in interview can be limited in the sense of an information-gathering tool. The interview lends itself to being used alongside other methods as a way of supplementing their data - adding detail and depth, such as preparation for a questionnaire, follow-

up to a questionnaire and triangulation with other methods - in order to corroborate facts using a different approach.

A commonly used technique to improve the internal validity is triangulation. Burns (2000, p. 419) defines triangulation as “the use of two or more methods of data collection in the study of some aspect of human behaviour”. He asserts that triangulation can be achieved by checking different data sources with the same method, or when different methods are used in relation to the same object of study. Generally, it is presumed from research methods text (Burns, 2004) that this multi-method approach will provide high confidence for both reliability and validity.

This is why different research tools are used to collect data and they give researchers combined sources for discussing data and interpreting results from different sources. Sagor (2000, pp. 19-22) has suggested that action researchers complete a “triangulation matrix – a simple grid that shows various data sources that will be used to answer each research question”, and also multi-methods produce different kinds of data on the same topic. The initial and obvious benefit of this is that it will involve more data, thus likely to improve the quality of the research. The strength of qualitative research lies in its triangulation, collecting information in many ways, rather than relying solely on one (Wolcott, 1988). Thus the concept “triangulation” is widely used in research to address the inadequacy of using a single method or tool.

As discussed above, collecting data from different sources and using different methods are crucial to corroborate the quality of a research. In this study, the researcher is aware of the importance of enhancing the reliability and validity of the data. As a result, the data collection was conducted by using multi-method, multi-person and multi-site approaches which benefit the triangulation of data. Data collection of this research was carried out through using not only different quantitative research methods including quasi-experimental and

questionnaire, but also qualitative methods such as interview, classroom observation and students' exercises. These give the researcher multiple sources of data for interpreting the results. In addition, multi-methods produce different kinds of data for the same topic. The initial and obvious benefit of this is that it involves more data and is thus more likely to improve the quality of the research. Hence, the concept 'triangulation' is applicable to this research.

4.8. Data analysis

There are two types of data analysis in this research: task-based data analysis and non-task-based data analysis. Task-based data analysis includes the analysis of the pre-teaching and post-teaching writing exercises of both the control and experimental groups at all three levels. Non-task-based data analysis covers the teachers and students' informal interviews, questionnaires and classroom observation data. Data analysis in this study has two main approaches.

- ***Quantitative data analysis***

Quantitative approach used in this research is descriptive analysis using mean scores and percentage. The mean scores refer to the mean scores of students using certain SFL grammatical features in their writing exercises and the mean scores of responses in the questionnaires. The percentage refers to the percentage of students who used the SFL grammatical features in their writing exercises and the percentage of responses in the questionnaires. Two types of data are analysed: (1) the task-based data from the pre-teaching and post-teaching writing exercises to gauge the differences in writing skills or the effectiveness of SFL in improving the students' writing skills before and after the SFL teaching; and (2) the non-task-based data from the questionnaires to examine the students' understanding and application of SFL and its four

grammatical features and the students' attitudes towards learning SFL grammatical features. Quantitative data analysis method is employed to analyse the data using SPSS and EXCEL.

- ***Qualitative data analysis***

Qualitative approach is used in this study to analyse and interpret three main types of data: (1) the non-task-based data collected from the teachers' and students' informal interviews to examine the teachers' views on teaching English writing to Chinese students and the students' views on learning SFL and its application; (2) the classroom observation notes to capture the students' classroom involvement and their interests in learning SFL; and (3) qualitative data interpretation and discussion to analyse the students' exercises to examine the difficulties and problems in the teaching and learning process of the four SFL grammatical features. Detailed data analysis and the results are covered in Chapters 5 and 6.

4.9. Limitation

All researchers have to make decisions about balancing the resources available and the effectiveness of the methods. It is very important for researchers to summarise the potential bias, errors or problems when conducting research. The possible limitations of this research are summarised below.

1. With regard to the research reliability and validity, multi-method is considered in this study. However, due to the limitation of the number of teachers being interviewed, the results should not be generalised to cover the ideas of English teachers in other universities or in China. Again, due to the limited number of students being interviewed, their views may not

represent the total views of other students who are involved in SFL learning.

2. The data were collected from the English-major students of one department of one university and thus the usefulness of SFL in improving students' writing skills should not be generalised to other students or universities. Further research on non-English-major students and in different universities will add more useful insights to the teaching of SFL and its role in the writing curriculum.
3. According to the action research cycle which involves planning, acting, observing and reflecting and then replanning, this cycle should be repeated to improve the teaching methods and teaching processes to benefit students.
4. The interview data are translated from Chinese into English and thus may not fully capture the exact feeling or emotion of the interviewees. Misunderstanding might happen because of the language differences and the researcher might have inadvertently added her own views, ideas and even personal feelings during the translation process.

4.10. Summary

This study involves teaching SFL grammatical features to develop English writing skills of Chinese students. It intends to examine the effectiveness of and the problems in teaching SFL grammatical features. This chapter describes and explains the methods used to collect data in relation to the research objectives of the study, namely task-based data from the pre-teaching and post-teaching writing exercises, and also non-task-based data from the teachers' and students' interviews, questionnaires and classroom observation. The chapter also discusses the whole teaching process which covers the participants, how

the teaching is conducted, what types of data are collected, how and why the data is collected. The data analysis approaches are also discussed. Finally, the questions about reliability and validity and limitations of this research and ethical issues of this study are examined.

CHAPTER 5. DATA ANALYSIS AND RESULT 1: TASK-BASED DATA

5.1. Introduction

Chapter 5 focuses on task-based data analysis including the pre-teaching and post-teaching writing exercises of both control and experimental groups and also the data of students' class exercises of the experimental group. The task-based data of students' writing exercises and class exercises are analysed by using quantitative data and qualitative data on a mutually inclusive basis. Quantitative statistical data analysis is conducted to analyse the pre-teaching and post-teaching writing data to compare the differences or effectiveness of students' writing before and after SFL teaching. At the same time, qualitative data analysis method is used to analyse the students' exercises to understand the difficulties and problems in teaching Chinese students of English the four SFL grammatical features and in their learning to develop their writing skills.

5.2. Pre-teaching data and post-teaching data analyses and results

Pre-teaching and post-teaching data analyses are conducted based on the students' writing exercises before and after SFL teaching. The purpose of the data analyses is to identify the differences and effectiveness of students' SFL awareness in their writing before and after SFL teaching and this is relevant to Research Objective 2, as stated in Chapter 1.

In regard to writing assessment, the focus could be on error analysis, cultural awareness, coherent and cohesion and so on. However, this study mainly focuses on the students' application of SFL grammatical features in their

writing and not other aspects. Therefore, other errors or improper expressions are not examined. The data analyses are divided into four sections.

Section 1: Pre-teaching and post-teaching Theme and Rheme data analyses;

Section 2: Pre-teaching and post-teaching lexical density data analyses;

Section 3: Pre-teaching and post-teaching nominalisation data analyses;

Section 4: Pre-teaching and post-teaching grammatical metaphor data analyses.

Participating students are classified into elementary, immediate and advanced levels according to their language proficiency. In each level, they are further divided into two groups: experimental group and control group. In each of the sections above, the researcher reads the writing exercises of the students in each group and level to identify the four grammatical features they used in their writing. The researcher then finds out the frequencies of the students' using of grammatical features and groups the numbers into different categories. Finally the researcher performs statistical analyses of the total, mean or percentage and the results are illustrated by tables which show the students' awareness of SFL and their effectiveness and problems in using SFL in their writing. The comparisons between the two groups at each level are conducted according to the statistical analyses results. In each of the grammatical feature analyses, the sample analysis is undertaken first to show the criteria of the analysis and how the statistical analysis is conducted and the results are presented in tables.

5.2.1. Theme and Rheme of the pre-teaching and post-teaching data analyses and results

In Theme and Rheme section, data analyses are performed on the basis of the students' narrative writing of the five thematic progression patterns such as parallel progression; continuous, linear or "zig-zag" progression; crisscross progression; split Rheme and centralised progression. Narrative samples were

chosen here for analysis as it was easier for students to express freely in narrative writing and this could reveal a good range of themes for analysis. In English, different choices of Theme contribute to different meanings and Theme can often assist writing development of different genres. Furthermore, examining the students' thematic progression patterns in their writing not only analyses if a student makes the right choice of Theme, but also looks at whether the writing is coherent. Therefore, the analyses are conducted by reading the students' writing to find out what sort of thematic progression patterns the students have used in their writing and how many times they have used the different patterns. These patterns are then grouped into different categories, to be followed by statistical analysis to study how the student used different thematic progression patterns in their writing. The following is an example taken from a student's narrative writing exercise with the title "An Unforgettable Experience". The thematic progression patterns in the writing are examined so as to find out how the students apply them in the exercise. The analysis is presented below.

- ***Sample analysis and results***

An Unforgettable Experience

Standing in front of the mirror and looking at myself after carefully making up, I smiled to myself. I was satisfied with my new appearance. I had a very important thing to do - having a big date with a girl.

It was a cold autumn afternoon. I was so excited that I felt even hot when I thought of going to meet a beautiful girl who I had adored for a long time. I arrived at the meeting place half an hour earlier than our fixed time. I was looking around referring to my watch from time to time.

Twenty minutes later, my angel came. With long black hair fluttering softly in the wind, she smiled to me. I was more excited and a bit nervous. During the whole afternoon, I could not remember clearly what I had said and just knew that I could not express myself fluently. In all, I felt that the time passed so quickly that I had not said all that I wanted to say to her.

With the beautiful memory, I came back to school unwillingly. That is the most unforgettable experience in my life.

Table 5.2.1a.: *Sample analysis of a student's writing for Thematic progression pattern*

Theme (T)	Rheme (R)
Paragraph 1	
1. Standing in front of the mirror and looking at myself after carefully making up,	I smiled to myself.
2. I	was satisfied with my new appearance.
3. I	had a very important thing to do -- having a date with a girl.
Paragraph 2	
4. It	was a cold autumn afternoon.
5. I	was so excited that I felt even hot when I thought of going to meet a beautiful girl who I had adored for a long time.
6. I	arrived at the meeting place half an hour earlier than our fixed time.
7. I	was looking around referring to my watch from time to time.
Paragraph 3	
8. Twenty minutes later,	my angel came.
9. With long black hair fluttering softly in the wind,	she smiled to me.
10. I	was more excited and a bit nervous.
11. During the whole afternoon,	I could not remember clearly what I had said and just knew that I could not express myself fluently.
12. In all,	I felt that the time passed so quickly and I had not said all that I wanted to say to her.

Paragraph 4	
13. With the beautiful memory,	I came back to school unwillingly.
14. That	is the most unforgettable experience in my life.

According to Table 5.2.1a, this piece of writing has four paragraphs and 14 sentences. I is the predominant ideational topical Theme, appearing in sentences 2, 3, 5, 6, 7 and 10. In sentences 1, 8, 9, 11, 12 and 13, *Standing in front of the mirror and looking at myself after carefully making up, Twenty minutes later, With long black hair fluttering softly in the wind, During the whole afternoon, In all, With the beautiful memory*, Themes are realised by circumstances functioning as topical Themes. *It* in sentence 4 is an ideational topical Theme to indicate time. *That*, the ideational topical Theme of sentence 14, refers to the whole of previous text. The Thematic progression patterns of this piece of writing are as follows:

Paragraph 1: T1 ----- R1
T2 (R1) ----- R2 (Continuous progression pattern)
T2 ----- R3 (Parallel progression pattern)

Paragraph 2: T1 ----- R1
T2 ----- R2 (Parallel progression pattern)
T2 ----- R3
T2 ----- R4

Paragraph 3: T1 ----- R1 (Centralised progression pattern)
T2 ----- R1
T3 (R1) ----- R2 (Continuous progression pattern)
T4 ----- R3 (T3) (Centralised progression pattern)
T5 ----- R3 (T3)

Paragraph 4: T1 ----- R1 (unexpected progression pattern)
T2 ----- R2 (unexpected progression pattern)

According to the thematic progression analysis above, two parallel, two continuous, two centralised and two unexpected thematic progression patterns are used in this piece of writing. It is demonstrated in the table below.

Table 5.2.1b.: *Thematic progression sample data analysis*

Student number	Mean					
	C1	C2	C3	C4	C5	C6
1	2	2	0	0	2	2

Category 1 (C1) = Parallel progression pattern

C2 = Continuous progression pattern

C3 = Crisscross progression pattern

C4 = Split Rheme pattern

C5 = Centralised progression pattern

C6 = unexpected progression pattern

5.2.1.1. Statistical data analysis of thematic progression patterns in the pre-teaching writing of the three levels of students

In the above, statistical analysis of the pre-teaching writing exercises of the three levels of students are conducted. The mean and the total are calculated. The total is the frequency of certain thematic progression patterns expressed by all students in both experimental and control groups in that particular level. For example, 30 students in the elementary level employed parallel progression patterns 90 times and therefore the total number of parallel progression patterns used is 90. The mean refers to the average number of parallel progression patterns used by the students and the mean here is three. In this case, on average each student employed parallel progression patterns three times in their writing. The same analyses are applied to other categories.

Comparison between experimental and control groups at elementary level

Table 5.2.1.1a.: *Comparison between the experimental and control groups at the elementary level in using thematic progression patterns in their pre-teaching writing exercises*

Group	Student Level	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Experimental	Elementary	30	99/3.30	41/1.37	1/0.03	0	1/0.03	27/0.90
Control	Elementary	30	104/3.47	42/1.40	2/0.07	0	2/0.07	31/1.03

C1 = Parallel progression pattern

C2 = Continuous progression pattern

C3 = Crisscross progression pattern

C4 = Split Rheme pattern

C5 = Centralised progression pattern

C6 = unexpected progression pattern

The above Table 5.2.1.1a illustrates the statistical comparison between the experimental and control groups at elementary level in using thematic progression patterns in their pre-teaching writing exercises. According to Table 5.2.1.1a, parallel progression pattern employment of the experimental group is less than that of the control group (mean 3.30 and 3.47 respectively). With regard to continuous progression pattern, the experimental group again used slightly fewer continuous progression patterns in their writing than the control group (mean 1.37 and 1.40 respectively). As can be seen from Table 5.2.1.1a, the employment of crisscross progression patterns and centralised progression patterns in the experimental group' writing are less than that of the control group. Both patterns have the same mean scores (0.03 for the experimental group and 0.07 for the control group). It can be seen from Table 5.2.1.1a that none of the students in both groups employed split Rheme pattern in their exercises. Compared with the control group, the experimental group students also employed fewer unexpected progression patterns in their writing.

- **Comparison between experimental and control groups at intermediate level**

Table5.2.1.1b.: *Comparison between the experimental and control groups at intermediate level in using thematic progression patterns in their pre-teaching writing exercises*

Group	Student Level	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Experimental	Intermediate	30	101/3.37	49/1.63	3/0.10	0	1/0.03	28/0.93
Control	Intermediate	30	110/3.67	52/1.73	3/0.10	0	2/0.07	27/0.90

C1 = Parallel progression pattern

C2 = Continuous progression pattern

C3 = Crisscross progression pattern

C4 = Split Rheme pattern

C5 = Centralised progression pattern

C6 = unexpected progression pattern

Table5.2.1.1b illustrates the comparison between the intermediate level experimental and control groups in using thematic progression patterns in their pre-teaching writing exercises. As can be seen from Table5.2.1.1b, the students in both experimental and control groups employed parallel progression patterns most compared to other thematic progression patterns and the mean scores for both groups are 3.37 and 3.67 respectively which indicate that the experimental group students used fewer parallel progression patterns than the control group students. Table 5.2.1.1b also show that comparatively continuous progression patterns were used less frequently by students in the experimental group than the control group with mean scores 1.63 vs. 1.73. With regard to crisscross progression pattern and split Rheme pattern, both groups have the same result (mean scores 0.10 vs. 0.10 and 0.00 vs. 0.00 for crisscross progression pattern and split Rheme pattern respectively). Compared with the control group, the experimental group used slightly fewer centralised progression patterns and the mean scores are 0.03 vs. 0.07. However, the experimental group used more unexpected progression patterns than the control group (mean scores 0.93 vs. 0.90).

- **Comparison between experimental and control groups at advanced level**

Table 5.2.1.1c.: *Comparison between the experimental and control groups at advanced level in using thematic progression patterns in their pre-teaching writing exercises*

Group	Student level	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Experimental	Advanced	30	106/3.53	54/1.80	3/0.10	0	4/0.13	25/0.83
Control	Advanced	30	109/3.63	60/2.00	4/0.13	0	4/0.13	24/0.80

C1 = Parallel progression pattern

C2 = Continuous progression pattern

C3 = Crisscross progression pattern

C4 = Split Rheme pattern

C5 = Centralised progression pattern

C6 = unexpected progression pattern

Table 5.2.1.1c shows the comparison between the experimental and control groups at advanced level in using thematic progression patterns in their pre-teaching writing exercises. According to Table 5.2.1.1c, the students in the experimental group used fewer parallel progression patterns, continuous progression and crisscross progression patterns than the control group students (mean 3.53 vs. 3.63, 1.80 vs. 2.00 and 0.10 vs. 0.13 respectively). As can be seen from Table 5.2.1.1c, the students in the experimental and control groups employed the same amount of centralised progression patterns and mean scores are the same at 0.13. However, no participant used split Rheme pattern in their writing. With regard to unexpected progression pattern, the two groups' have slight difference in using the pattern in their exercises and the mean scores are 0.83 vs. 0.80 with the experimental group used the pattern more frequently.

• **Comparison between experimental and control groups at all three levels**

Table 5.2.1.1d.: *Statistical data analysis of the use of thematic progression patterns by the experimental group students at all three levels in their pre-teaching writing exercises*

Level	Group	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Elementary	Experimental	30	99/3.30	41/1.37	1/0.03	0	1/0.03	27/0.90
Intermediate	Experimental	30	101/3.37	49/1.63	3/0.10	0	1/0.03	28/0.93
Advanced	Experimental	30	106/3.53	54/1.80	3/0.10	0	4/0.13	25/0.83

C1 = Parallel progression pattern

C2 = Continuous progression pattern

C3 = Crisscross progression pattern

C4 = Split Rheme pattern

C5 = Centralised progression pattern

C6 = Unexpected progression pattern

Table 5.2.1.1e.: *Statistical data analysis of the use of thematic progression patterns by the control group students at all three levels in their pre-teaching writing exercises*

Level	Group	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Elementary	Control	30	104/3.47	42/1.40	2/0.07	0	2/0.07	31/1.03
Intermediate	Control	30	110/3.67	52/1.73	3/0.10	0	2/0.07	27/0.90
Advanced	Control	30	109/3.63	60/2.00	4/0.13	0	4/0.13	24/0.80

The above two Tables 5.2.1.1d and 5.2.1.1e illustrate the statistical data analysis of the use of thematic progression patterns by both experimental and control groups at all three levels in their pre-teaching writing exercises. Differences between the two groups at all three levels in employing parallel progression pattern, continuous progression pattern, crisscross progression pattern, split Rheme pattern, centralised progression pattern and unexpected progression pattern in writing are shown in the two tables. In general, the mean scores of the students in the two groups at the three levels employing different thematic progression patterns in their writing are quite close with each other.

However, as can be seen from the above two tables, the mean scores of the students in the experimental and control groups at the three levels employing progression patterns in their writing are 3.30 vs. 3.47 (elementary), 3.37 vs. 3.67 (intermediate) and 3.53 vs. 3.63 (advanced). Comparatively, the control group students in general employed progression patterns more often than the experimental group students. Regarding the continuous progression pattern, the mean score of the two groups of students at the three levels are 1.37 vs. 1.40 (elementary), 1.63 vs. 1.73 (intermediate) and 1.80 vs. 2.00 (advanced). It can be seen from the tables that the control group students at all three levels used continuous progression patterns more often than the experimental group students. Compared with the control group, the experimental group students employed fewer crisscross progression patterns except for those in the intermediate level. Both groups of students at the intermediate level have the same mean scores (mean 0.03 vs. 0.07 (elementary), 0.10 vs. 0.10 (intermediate), 0.10 vs. 0.13 (advanced)). As shown in the tables, none of the students in either group at any level used split Rheme pattern. The mean scores for centralised progression patterns are 0.03 vs. 0.07, 0.03 vs. 0.07, 0.13 vs. 0.13 for elementary, intermediate and advanced levels respectively. The experimental group students at the elementary level and the intermediate level employed fewer centralised progression patterns in their writing than the control group students (mean 0.03 vs. 0.07 (elementary), 0.03 vs. 0.07 (intermediate)). However, employment of the centralised progression patterns by the experimental group students at the advanced level were as much as that of the control group students (mean 0.13 vs. 0.13). Accordingly, the tables show that the mean scores of employment of the unexpected progression patterns are 0.90 vs. 1.03 (elementary), 0.93 vs. 0.90 (intermediate) and 0.83 vs. 0.80 (advanced). The experimental group students at elementary level used fewer unexpected patterns than the control group students. However, the experimental group students at intermediate and advanced levels used this pattern more than the control group students. In conclusion, the students in the

control group employed different thematic progression patterns more often than the experimental group students in their writing except in the case of employment of unexpected patterns by the intermediate and advanced level students. Detailed comparison of the post-teaching writing exercises between the experimental and control groups at each level is presented below.

5.2.1.2. Statistical data analysis of thematic progression patterns in the post-teaching writing of the three levels students and results

Regarding the employment of thematic progression pattern in the post-teaching writing exercises of the students, statistical data analysis of the students’ exercises from both experimental and control groups at all three levels are undertaken. The comparison between the experimental group and the control group at the elementary level is conducted first, and then the intermediate and advanced levels. Finally, the data and results of the post-teaching writing exercises of the students in both groups at all levels are compared and illustrated by tables.

- *Comparison between experimental and control groups at the elementary level*

Table 5.2.1.2a.: *Comparison of thematic progression patterns statistical analysis results of the post-teaching writing between experimental and control groups at elementary level*

Group	Level	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Experimental	Elementary	30	90/3.00	43/1.43	5/0.17	3/0.1	5/0.17	22/0.73
Control	Elementary	30	101/3.40	43/1.43	3/0.10	0/0.00	2/0.06	29/0.97

C1 = Parallel progression pattern
C3 = Crisscross progression pattern
C5 = Centralised progression pattern

C2 = Continuous progression pattern
C4 = Split Rheme pattern
C6 = Unexpected progression pattern

Table 5.2.1.2a illustrates the comparison of thematic progression patterns statistical analysis results of post-teaching writing between the experimental and control groups at the elementary level. According to Table 5.2.1.2a, the students in the experimental group used fewer parallel progression patterns than the students in the control group (mean 3.00 vs. 3.40). With regard to continuous progression pattern, the students in the experimental group used as many continuous progression patterns as the control group students do in their writing (mean 1.43 vs. 1.43). As can be seen from Table 5.2.1.2a, the students in the experimental group employed more crisscross progression patterns and split Rheme patterns in their writing than the control group students (mean 0.17 vs. 0.10 (crisscross progression pattern) and 0.10 vs. 0 (split Rheme pattern)). Compared with the control group students, the experimental group students also employed more centralised progression patterns in their writing (mean 0.17 vs. 0.06). Regarding unexpected progression pattern, the experimental group students used fewer unexpected progression patterns than the control group students (mean 0.73 vs. 0.97).

- Comparison between experimental and control groups at intermediate level***

Table 5.2.1.2b.: *Comparison between the experimental and control groups at intermediate level in using thematic progression patterns in their post-teaching writing exercises*

Group	Level	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Experimental	Intermediate	30	94 / 3.10	48 / 1.60	6 / 0.20	4/ 0.13	7 / 0.23	21 / 0.70
Control	Intermediate	30	105 / 3.50	49 / 1.63	4 / 0.13	0/0.00	3 / 0.10	24 / 0.80

- C1 = Parallel progression pattern
C2 = Continuous progression pattern
- C3 = Crisscross progression pattern
C4 = Split Rheme pattern
- C5 = Centralised progression pattern
C6 = Unexpected progression pattern

Table 5.2.1.2b shows the comparison between the experimental and control groups at the intermediate level in using thematic progression patterns in their post-teaching writing exercises. As shown in Table 5.2.1.2b, students in the experimental group used fewer parallel progression patterns and continuous progression patterns in their writing than the students in the control group (mean 3.10 vs. 3.50 (parallel progression pattern) and 1.60 vs. 1.63 (continuous progression pattern)). Compared with the control group, the experimental group students employed more crisscross progression patterns, split Rheme patterns and centralised progression patterns (mean 0.20 vs. 0.13; 0.13 vs. 0.00; 0.23 vs. 0.10 respectively). The experimental group students used fewer progression patterns than the control group students (mean 0.70 vs. 0.83).

- *Comparison between experimental and control groups at the advanced level*

Table 5.2.1.2c.: *Comparison between the experimental and control groups at advanced level in using thematic progression patterns in their post-teaching writing exercises*

Group	Level	Number of students	Total/Mean					
			C1	C2	C3	C4	C5	C6
Experimental	Advanced	30	95/3.20	50/1.70	9/0.30	7/0.23	9/0.30	19/0.63
Control	Advanced	30	110/3.70	58/1.93	5/0.16	0/0.00	4/0.13	25/0.83

C1 = Parallel progression pattern

C2 = Continuous progression pattern

C3 = Crisscross progression pattern

C4 = Split Rheme pattern

C5 = Centralised progression pattern

C6 = Unexpected progression pattern

Table 5.2.1.2c illustrates the comparison between the experimental and control groups at advanced level in using thematic progression patterns in their post-teaching writing exercises. According to Table 5.2.1.2c, the experimental group students used fewer parallel progression patterns and continuous progression patterns than the control group students (mean 3.20 vs. 3.70 and 1.70 vs. 1.93 respectively). However, compared with the control group students,

the experimental group students used more crisscross progression patterns, split Rheme patterns and centralised progression patterns (mean 0.30 vs. 0.16; 0.23 vs. 0.00 and 0.30 vs. 0.13 respectively). With regard to unexpected progression pattern, the experimental group students employed this pattern less often than the control group students.

- Comparison between experimental and control groups at three levels***

For the analysis of the use of thematic progression patterns in the post-teaching writing exercises of the experimental and control groups at all three levels, the statistical analysis methods used are same as those of the pre-teaching writing data analyses. The post-teaching writing data analyses and results are illustrated by tables below.

Table 5.2.1.2d.: *Statistical data analysis of the use of thematic progression patterns in the post-teaching writing exercises of the experimental group at all three levels*

Student level	Number of students	Total/Mean					
		C1	C2	C3	C4	C5	C6
Elementary	30	90/3.00	43/1.43	5/0.17	3/0.10	5/0.17	22/0.73
Intermediate	30	94/3.10	48/1.60	6/0.20	4/0.13	7/0.23	21/0.70
Advanced	30	95/3.20	50/1.70	9/0.30	7/0.23	9/0.30	19/0.63

C1 = Parallel progression pattern
C3 = Crisscross progression pattern
C5 = Centralised progression pattern

C2 = Continuous progression pattern
C4 = Split Rheme pattern
C6 = Unexpected progression pattern

Table 5.2.1.2e.: *Statistical data analysis of the use of thematic progression patterns in the post-teaching writing exercises of the control group at all three levels*

Student level	Number of students	Total/Mean					
		C1	C2	C3	C4	C5	C6
Elementary	30	101/3.40	43/1.43	3/0.10	0	2/0.06	29/0.97
Intermediate	30	105/3.50	49/1.63	4/0.13	0	3/0.10	24/0.80
Advanced	30	110/3.70	58/1.93	5/0.16	0	4/0.13	25/0.83

Tables 5.2.1.2d and 5.2.1.2e above illustrate the use of thematic progression patterns in the post-teaching writing exercises by both experimental and control groups at all three levels. Differences in employing parallel progression patterns, continuous progression patterns, crisscross progression patterns, split Rheme patterns, centralised progression patterns and unexpected progression patterns in the writing exercises between the two groups at all three levels are shown in the two tables above. As can be seen from the above two tables, the students of the experimental and control groups at the three levels who employed parallel progression patterns in their writing have mean scores 3.00 vs. 3.40 (elementary), 3.10 vs. 3.50 (intermediate) and 3.20 vs. 3.70 (advanced). Comparatively, the control group students at all three levels employed more parallel progression patterns than the experimental group students. Regarding the continuous progression pattern, the mean scores of the two groups at the three levels are 1.43 vs. 1.43 (elementary), 1.60 vs. 1.63 (intermediate) and 1.70 vs. 1.93 (advanced). It can be seen from the tables that at the elementary level the experimental group students employed continuous progression patterns as often as the control group students. However, at the intermediate and advanced levels, the experimental group students employed fewer continuous progression patterns than the control group students. Advanced level students in the control group in particular used continuous progression patterns much more often than those in the experimental groups. With regard to

crisscross progression pattern, compared with the control group students at all three levels, the experimental group students employed more crisscross progression patterns (mean score 0.17 vs. 0.10 (elementary), 0.20 vs. 0.13 (intermediate) and 0.30 vs. 0.16 (advanced)). As shown in the tables, none of the students in the control groups at any level used split Rheme pattern. However, some students in the experimental group at the three levels employed split Rheme patterns, and the mean scores are 0.10 (elementary), 0.13 (intermediate) and 0.23 (advanced). In terms of the centralised progression pattern, the mean scores of the experimental and control groups at all three levels are 0.17 vs. 0.06 (elementary); 0.23 vs. 0.10 (intermediate) and 0.30 vs. 0.13 (advanced). Compared with the control group students at all three levels, the experimental group students used more centralised progression patterns. Accordingly, the tables show that the mean scores of employment of the unexpected progression patterns are 0.73 vs. 0.97 (elementary), 0.70 vs. 0.80 (intermediate) and 0.63 vs. 0.83 (advanced). Compared with the students in the control groups at all three levels, the experimental group students employed fewer unexpected progression patterns.

It can be seen from the comparison above that the experimental groups employed more continuous progression patterns, split Rheme patterns and centralised progression patterns than the control groups. These reveal that after the teaching of the use of thematic progression patterns, the experimental groups can use not only parallel progression pattern and continuous progression pattern but also the other thematic progression patterns. The experimental groups can use split in particular Rheme pattern in their writing exercise whereas no students in the control groups used split Rheme pattern in their writing. These also reveal that the control groups used limited thematic progression patterns such as parallel and continuous progression patterns which are commonly used in their writing. The other patterns which are a bit challenging to these students were used less often. Regarding unexpected progression pattern, the experimental group students used this pattern less than

the control group students and this reveals that the writing of the experimental group students is more coherent than that of the control group students. In conclusion, the teaching of the Theme and Rheme grammatical features and thematic progression patterns gives some insights about students' handling of theme and rheme in their writing development. For further discussion on the characteristics of written language, the grammatical feature of lexical density is analysed in the next section.

5.2.2. Lexical density of the pre-teaching and post-teaching data analyses and results

The lexical density section is an analysis of the density of information in the students' expository grammatical structure. It is measured according to the number of lexical words in a clause and of the whole text. The mean of the lexical words in a clause and in the whole text and the ratio of lexical words to the total number of words in a text and in each clause are calculated. Lexical words include nouns, main verbs, and most adjectives and adverbs. The researcher first reads the students' writing and counts the total words and clauses in the exercise of every student and then counts the number of lexical words in the whole text and in each clause and finally calculates the mean and the ratio of lexical words in each exercise of the experimental and control students at all three levels. A sample statistical analysis is conducted on a student's expository writing exercise with the topic "Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?" The sample analysis to illustrate the analysis of lexical density of the student's writing is presented below. Writing exercises is conducted according to the lexical items contained within the grammatical structure. It is measured according to the number of lexical words in a clause and of the whole text. The mean of the lexical words in a clause and in the whole text and the ratio of lexical words to the total number

of words in a text and in each clause are calculated. Lexical words include nouns, main verbs, and most adjectives and adverbs. The researcher first reads the students' writing and counts the total words and clauses in the exercise of every student and then counts the number of lexical words in the whole text and in each clause and finally calculates the mean and the ratio of lexical words in each exercise of the experimental and control students at all three levels. A sample statistical analysis is conducted on a student's expository writing exercise with the topic "Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?" The sample analysis to illustrate the analysis of lexical density of the student's writing is presented in the appendix.

5.2.2.1. Statistical analysis of lexical density in the pre-teaching writing of students in experimental and control groups at all three levels

Statistical analysis of lexical density in the pre-teaching writing exercises of students in both experimental and control groups at all three levels is conducted in the manner illustrated in the above sample analysis by firstly comparing the experimental and control group at elementary level, then the intermediate level and lastly the advanced level. The statistical analysis and results are illustrated by table. Finally, an overall comparison of the lexical density and results between the experimental and control groups at all three levels is undertaken and the statistical analysis and the results are also illustrated by table.

- **Comparison between experimental and control groups at elementary level**

Table 5.2.2.1a.: *Statistical analysis of lexical density of the pre-teaching writing exercises between the experimental and control groups at elementary level.*

Elementary level								
Group	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Experimental	30	198	11.2	89.5	17.7	8	45.1%	45.1%
Control	30	203	12.4	90.1	16.4	7.3	44.5%	44.5%

C1= Average number of words in the text C2 = Average number of clauses in the text

C3 = Average number of lexical words in the text

C4 = Average number of word clause in the text

C5 = Average number of lexical words per clause in the text

C6 = Average lexical density per clause in the text

C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table 5.2.2.1a shows the comparison of lexical density in the pre-teaching writing exercises between the experimental and control groups at the elementary level. The analysis starts from the text level. As can be seen from Table 5.2.2.1a, the average numbers of words in the exercises written by the experimental and control groups are 198 and 203 respectively. The numbers of lexical words they used on average are 89.5 and 90.1 and their lexical density scores are 45.1% and 44.5% respectively. The analysis then moves on to clause level. As shown in the table, the average numbers of clauses in the text of the experimental and control groups are 11.2 and 12.4 respectively. The average numbers of words per clause are 17.7 and 16.4, with the average number of lexical words per clause at 8 and 7.3 respectively. The average lexical density scores per clause are 45.1% and 44.5%. According to the statistical analysis results shown above, the lexical density of the experimental group's writing at the elementary level is slightly higher than that of the control

group. Compared with the control group, despite the slight difference, the experimental group's writing has smaller numbers of words and clauses in total but has more words and lexical words in each clause. This indicates that their writing has packed in more information and is more lexically dense than the writing of the control group.

- ***Comparison between experimental and control groups at intermediate level***

Table 5.2.2.1b.: *Statistical analysis of lexical density of the pre-teaching writing exercises between the experimental and control groups at intermediate level*

Intermediate level								
Group	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Experimental	30	199	12.7	92	15.7	7.2	45.9%	45.9%
Control	30	205	13.1	92.3	15.7	7.1	45.2%	45.2%

C1= Average number of words in the text C2 = Average number of clauses in the text

C3 = Average number of lexical words in the text

C4 = Average number of words per clause in the text

C5 = Average number of lexical words per clause in the text

C6 = Average lexical density per clause in the text

C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table 5.2.2.1b shows the comparison of lexical density in the pre-teaching writing exercises between the experimental and control groups at the intermediate level. The analysis starts from the text level. According to the table, the average numbers of words in the text of the experimental and control groups are 199 and 205 respectively. The average numbers of lexical words are 92 and 92.3 and their lexical densities are 45.9% and 45.2% respectively. The analysis then moves on to the clause level. As shown in the table, the

average numbers of clauses in the text of the experimental and control groups are 12.7 and 13.1 respectively. The average numbers of words per clause for both groups are the same at 15.7. The average numbers of lexical words per clause are 7.2 and 7.1 and the average lexical densities per clause are 45.9% and 45.2% respectively. According to the statistical analysis results shown above, the lexical density of the writing of the experimental group at the intermediate level is almost same as that of the control group. Compared with the control group, the experimental group’s writing has smaller numbers of words and clauses but the number of words and lexical words in each clause are same as that of the control group. This indicates that their writing contains slightly more information and is to some extent lexically denser than that of the control group. However, the difference in lexical density between the two groups is too small to be considered significant.

- ***Comparison between experimental and control groups at advanced level***

Table 5.2.2.1c.: *Statistical analysis of lexical density of the pre-teaching writing exercises between the experimental and control groups at advanced level*

Advanced level								
Group	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Experimental	30	195	11.8	91.2	16.5	7.7	46.7%	46.7%
Control	30	201	12.4	91.7	16.2	7.4	45.7%	45.7%

C1= Average number of words in the text C2 = Average number of clauses in the text
C3 = Average number of lexical words in the text
C4 = Average number of words per clause in the text
C5 = Average number of lexical words per clause in the text
C6 = Average lexical density per clause in the text
C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table 5.2.2.1c shows the comparison of lexical density in the pre-teaching writing exercises between the experimental and control groups at the advanced level. The analysis starts from the text level. It can be seen from the table that the average numbers of words in the text of the experimental and control groups are 195 and 201 respectively. Their average numbers of lexical words are 91.2 and 91.7, and their lexical densities are 46.7% and 45.7% respectively. The analysis then moves on to the clause level. As shown in the table, the average numbers of clauses in the text of the experimental and control groups are 11.8 and 12.4 respectively. The average numbers of words per clause are 16.5 and 16.2, and the average numbers of lexical words per clause are 7.7 and 7.4 and the average lexical densities per clause are 46.7% and 45.7% respectively. Regarding the statistical analysis result illustrated above, the lexical density of the experimental group's writing at the advanced level is slightly better than that of the control group (ratio 46.7% vs. 45.7%). Compared with the control group, the experimental group's writing has smaller numbers of words and clauses in the text but the average number of words per clause is higher (mean 16.5 vs. 16.2). The experimental group also has a higher average number of lexical words in each clause than the control group (mean 7.7 vs. 7.4). This indicates that the experimental group's writing has more words packed in each clause and higher lexical density. However, the difference in lexical density between the two groups is very small.

- **Comparison between experimental and control groups at all three levels**

Table 5.2.2.1d.: *Statistical analysis of lexical density of the pre-teaching writing exercises of the experimental group at all three levels*

Experimental group								
Level	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Elementary	30	198	11.2	89.5	17.7	8	45.1%	45.1%
Intermediate	30	199	12.7	92	15.7	7.2	45.9%	45.9%
Advanced	30	195	11.8	91.2	16.5	7.7	46.7%	46.7%

C1= Average number of words in the text C2 = Average number of clauses in the text

C3 = Average number of lexical words in the text

C4 = Average number of words per clause in the text

C5 = Average number of lexical words per clause in the text

C6 = Average lexical density per clause in the text

C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table 5.2.2.1e.: *Statistical analysis of lexical density of the pre-teaching writing exercises of the control group at all three levels*

Control group								
Level	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Elementary	30	203	12.4	90.1	16.4	7.3	44.5%	44.5%
Intermediate	30	205	13.1	92.3	15.7	7.1	45.2%	45.2%
Advanced	30	201	12.4	91.7	16.2	7.4	45.7%	45.7%

Tables 5.2.2.1d and 5.2.2.1e above illustrate the lexical densities of the pre-teaching writing exercises of the experimental and control groups at all three levels. At the text level, the average word number of the writing of the experimental group is generally less than that of the control group (198 vs. 203

(elementary); 199 vs. 205 (intermediate); 195 vs. 201 (advanced)), and the average number of lexical words in their exercises is also less than that of the control group (89.5 vs. 90.1 (elementary); 92 vs. 92.3 (intermediate); 91.2 vs. 91.7 (advanced)). Compared with the control groups, the experimental groups at all three levels have a slightly higher lexical density in their writing than the control groups (ratio 45.1% vs. 44.5% (elementary); 45.9% vs. 45.2% (intermediate); 46.7% vs. 45.7% (advanced)). In this case, the writing of the experimental groups is lexically denser than that of the control groups because the experimental groups have fewer words in their writing exercises but more lexical words. However, at the clause level, the writing exercises of the experimental groups have a higher average number of clauses (11.2 vs. 12.4 (elementary); 12.7 vs. 13.1 (intermediate); 11.8 vs. 12.4 (advanced)), a higher average number of words in each clause (17.7 vs. 16.4 (elementary); 15.7 vs. 15.7 (intermediate); 16.5 vs. 16.5 (advanced)) and a higher average number of lexical words per clause (8 vs. 7.3 (elementary); 7.2 vs. 7.1 (intermediate); 7.7 vs. 7.4 (advanced)) than the control group's writing. The lexical density in the writing exercises of the experimental groups at all three levels is higher than that of the control groups as there are less clauses and more lexical words in each clause which convey more information. As a matter of fact, the lexical density in the writing of the experimental group is higher than that of the control group students (ratio 45.1% vs. 44.5% (elementary); 45.9% vs. 45.2% (intermediate); 46.7% vs. 45.7% (advanced)).

5.2.2.2. Statistical analysis of lexical density in the post-teaching writing of students in experimental and control groups at all three levels

The statistical analysis of lexical density in the post-teaching writing exercises of the experimental and control groups at all three levels is undertaken according to the same data analysis methods mentioned previously. The

comparison between the experimental and control groups at the elementary level is conducted first, and then the intermediate and advanced levels. Finally, the lexical densities of the post-teaching writing exercises between the experimental and control groups at all three levels are compared and illustrated by tables.

- ***Comparison between experimental and control groups at elementary level***

Table5.2.2.2a.: *Comparison of lexical density of the post-teaching writing exercises between experimental and control groups at elementary level*

Elementary level								
Group	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Experimental	30	199.8	12.13	92.33	16.96	7.87	46.3%	46.3%
Control	30	200	12.23	90.93	16.83	7.65	45.4%	45.4%

C1= Average number of words in the text C2 = Average number of clauses in the text

C3 = Average number of lexical words in the text

C4 = Average number of words per clause in the text

C5 = Average number of lexical words per clause in the text

C6 = Average lexical density per clause in the text

C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table5.2.2.2a illustrates the comparison of lexical density of the post-teaching writing exercises between the experimental and control groups at the elementary level. Starting from the text level, it can be seen from Table 5.2.2.2a that the average numbers of words in the exercises of the experimental and control groups are 199.8 and 200 respectively; their average numbers of lexical words are 92.33 and 90.93 and their lexical densities are 46.3% and 45.4%. The analysis then moves on to clause level. As shown in the above table, the average numbers of clauses in the exercises of the experimental and

control groups are 12.13 and 12.23 respectively; the average numbers of words per clause are 16.96 and 16.83; the average numbers of lexical words per clause are 7.87 and 7.65 and the average lexical densities per clause are 46.3% and 45.4%. The results illustrated above show that the lexical density of the experimental group's writing at the elementary level is slightly higher than that of the control group (46.3% vs. 45.4%). Compared with the control group, the experimental group's writing has fewer words and clauses in the text but the average number of words per clause is higher than that of the control group (mean 16.96 vs. 16.68), and the average number of lexical words in each clause is also higher (7.87 vs. 7.65). This indicates that the writing of the experimental group contains more words in each clause and has a higher lexical density.

- Comparison between experimental and control groups at intermediate level***

Table 5.2.2.2b.: *Comparison of lexical density of the post-teaching writing exercises between experimental and control groups at intermediate level*

Intermediate level								
Group	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Experimental	30	198	12.33	94.9	16.7	7.96	47.9%	47.9%
Control	30	205	11.93	93.4	17.35	7.85	45.3%	45.3%

C1= Average number of words in the text C2 = Average number of clauses in the text
C3 = Average number of lexical words in the text
C4 = Average number of words per clause in the text
C5 = Average number of lexical words per clause in the text
C6 = Average lexical density per clause in the text
C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table 5.2.2.2b shows the comparison of the lexical density of the post-teaching writing exercises between the experimental and control groups at the intermediate level. The analysis starts from the text level. As can be seen from the table above, the average numbers of words in the texts of the experimental and control groups are 198 and 205 respectively; their average numbers of lexical words are 94.9 and 93.4 and their lexical densities are 47.9% and 45.3%. Great differences can be seen from the statistical analysis of the lexical density of the post-teaching writing between the experimental and control groups at the intermediate level. The analysis then moves on to the clause level. As shown in the table, the average numbers of clauses of the texts of the experimental and control groups are 12.33 and 11.93 respectively; the average numbers of words per clause are 16.7 and 17.35; the average numbers of lexical words per clause are 7.96 and 7.85; and the average lexical densities per clause are 47.9% and 45.3%. As illustrated above, the lexical density of the experimental group's writing at the intermediate level is higher than that of the control group (47.9% vs. 45.3%). Compared with the control group's writing, the experimental group's exercises have fewer words in the text and in each clause, but more lexical words in each clause and therefore the lexical density in each clause is higher than that of the control group's exercises. In contrast, the writing of the control group students has more words in the text, fewer clauses and more words but fewer lexical words in each clause, and thus the lexical density is lower.

- **Comparison between experimental and control groups at advanced level**

Table 5.2.2.2c.: *Comparison of lexical density of the post-teaching writing exercises between experimental and control groups at advanced level*

Advanced level								
Group	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Experimental	30	192.5	13.83	93.2	15.4	7.64	48.8%	48.8%
Control	30	199.83	13.07	90.7	15.69	7.10	45.3%	45.3%

C1= Average number of words in the text C2 = Average number of clauses in the text

C3 = Average number of lexical words in the text C4 = Average number of words per clause in the text

C5 = Average number of lexical words per clause in the text

C6 = Average lexical density per clause in the text

C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table 5.2.2.2c illustrates the comparison of lexical density of the post-teaching writing exercises between the experimental and control groups at the advanced level. At the text level, as can be seen from the table above, the average numbers of words in the texts of the experimental and control groups are 192.5 and 199.83 respectively; the average numbers of lexical words are 93.2 and 90.7; and the lexical densities are 48.8% and 45.3%. The writing of the experimental group students has fewer words in the text, but more lexical words and a higher lexical density than that of the control group students. The analysis then moves on to the clause level. As shown in the table above, the average numbers of clauses in the texts of the experimental and control groups are 13.83 and 13.07 respectively; the average numbers of words per clause are 15.4 and 15.69; the average numbers of lexical words per clause are 7.64 and 7.10; and the lexical densities per clause are 48.8% and 45.3%. According to the statistical analysis results shown, the experimental group's writing has

more clauses and more lexical words in each clause and thus the lexical density is higher. Compared with the experimental group’s writing, the control group’s writing has fewer words and lexical words in each clause. This indicates that the control group’s writing has less information and the lexical density is lower.

- *Comparison between experimental and control groups at all three levels*

Table 5.2.2.2d.: *Statistical analysis of lexical density of the post-teaching writing exercises of the experimental group at all three levels*

Experimental group								
Level	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Elementary	30	199.8	12.13	92.33	16.96	7.87	46.3%	46.3%
Intermediate	30	198	12.33	94.9	16.7	7.96	47.9%	47.9%
Advanced	30	192.5	13.83	93.2	15.4	7.64	48.8%	48.8%

C1= Average number of words in the text C2 = Average number of clauses in the text
 C3 = Average number of lexical words in the text C4 = Average number of words per clause in the text
 C5 = Average number of lexical words per clause in the text
 C6 = Average lexical density per clause in the text
 C7 = Average lexical density (Ratio of number of lexical words to total number of words in the text)

Table 5.2.2.2e.: *Statistical analysis of lexical density of the post-teaching writing exercises of the control group at all three levels*

Control group								
Level	Number of students	Mean/Ratio						
		C1	C2	C3	C4	C5	C6	C7
Elementary	30	200	12.23	90.93	16.83	7.65	45.4%	45.4%
Intermediate	30	205	11.93	93.4	17.35	7.85	45.3%	45.3%
Advanced	30	199.83	13.07	90.7	15.69	7.10	45.3%	45.3%

Tables 5.2.2.2d and 5.2.2.2e illustrate the lexical densities of the post-teaching writing exercises of the experimental and control groups at all three levels. At the text level, the experimental groups' writing exercises have fewer words than those of the control groups (99.8 vs. 200 (elementary); 198 vs. 205 (intermediate); 192 vs. 199.83 (advanced)). However, the experimental groups have more lexical words in the text than the control groups (92.33 vs. 90.93 (elementary); 94.9 vs. 93.4 (intermediate); 93.2 vs. 90.7 (advanced)). Therefore, the lexical densities in the writing of the experimental groups at all three levels are higher than that of the control groups (46.3% vs. 45.4% (elementary); 47.9% vs. 45.3% (intermediate); 48.8% vs. 45.3% (advanced)). Compared with the control group students' exercises at all three levels, the experimental group's exercises have more lexical words per clause (7.87 vs. 7.65 (elementary); 7.96 vs. 7.78 (intermediate); 7.64 vs. 7.10 (advanced)). In addition, according to the statistical results, the lexical density per clause of the experimental groups is also higher than that of the control groups (46.3% vs. 45.4% (elementary); 47.9% vs. 45.3% (intermediate); 48.8% vs. 45.3% (advanced)).

- ***Comparison of lexical density of pre- and post-teaching writing exercises between experimental and control groups at all three levels***

Table 5.2.2.2f.: *Comparison of lexical density of the pre- and post-teaching writing exercises between the experimental and control groups at all three levels*

Level	Lexical density			
	Experimental group		Control group	
	Pre-teaching writing	Post-teaching writing	Pre-teaching writing	Post-teaching writing
Elementary	45.1%	46.3%	44.5%	45.4%
Intermediate	45.9%	47.9%	45.2%	45.3%
Advanced	46.7%	48.8%	45.7%	45.3%

Table 5.2.2.2f illustrates the comparison of lexical density of the pre- and post-teaching writing exercises between the experimental and control groups at all three levels. The above table show that in the pre-teaching writing exercises, the differences in lexical density between the experimental and control groups at the three levels are small (45.1% vs. 44.5% (elementary); 45.9% vs. 45.2% (intermediate); 46.7% vs. 45.7% (advanced)). However, there are noticeable differences in the lexical density of the post-teaching writing exercises between the experimental and control groups at all three levels (46.3% vs. 45.4% (elementary); 47.9% vs. 45.3% (intermediate) ; 48.8% vs. 45.3% (advanced)) . As shown in Table 5.2.2.2f, the lexical density of the post-teaching writing exercises of the experimental groups is much higher than that of the control groups (46.3% vs. 45.1% (elementary); 47.9% vs. 45.9% (intermediate); 48.8% vs. 46.7% (advanced)). However, the lexical density of the post-teaching writing exercises of the control groups has not changed much (45.4% vs. 44.5% (elementary); 45.3% vs. 45.2% (intermediate); 45.3% vs. 45.7% (advanced)). Teaching lexical density to students can be useful in developing

students distinguish spoken and written English and raises their awareness of how to include more meanings and information into sentences.

According to the above statistical analysis of the lexical density of the pre- and post-teaching writing exercises between the experimental and control groups, the pre-teaching writing of the experimental group students at all three levels is lexically denser than the pre-teaching writing of the control group students. The pre-teaching writing exercises of the experimental groups at all three levels have fewer clauses, but more lexical words in each clause which contain more information than that of the control group (45.1% vs. 44.5% (elementary); 45.9% vs. 45.2% (intermediate); 46.7% vs. 45.7% (advance)). As can be seen from the results, the differences in the pre-teaching writing exercises between the two groups at all three levels are very small. However, big differences can be seen between the two groups in the post-teaching writing exercises (46.3% vs. 45.4% (elementary); 47.9% vs. 45.3% (intermediate); 48.8% vs. 45.3% (advanced)). After being taught the grammatical features of lexical density, the experimental groups at all three levels have higher lexical density in their post-teaching writing exercises than the control groups. As such, the experimental groups at all three levels have a higher awareness of using lexical words in their writing and they have tried to express themselves in written English. As a result, teaching SFL grammatical features of lexical density not only helps students distinguish spoken and written English, but also develop their awareness about general writing and academic and scientific writing.

5.2.3. Statistical analyses of nominalisation and grammatical metaphor in the pre-teaching and post-teaching writing exercises and results

Halliday (1998a) points out that lexical density, nominalisation and grammatical metaphor are the main lexicogrammatical characteristics of the

written (academic) language. Nominalisation has been known as “the single most powerful resource for creating grammatical metaphor”. (Halliday & Matthiessen, 2004) On the basis of this, the data for nominalisation and grammatical metaphor are analysed together.

In the nominalisation section, data analysis is conducted according to two criteria: (1) using a verb or an adjective as a noun, with or without morphological transformation, so that the word can now act as the head of a noun phrase; and (2) Givón’s nominalisation structural adjustments.

Givón describes nominalisation as involving a set of structural adjustments (Givón, 1993, pp. 288-299) which produce nominalisation structures. The structural adjustments are summarised with examples given as follows:

1. The subject and the object become possessive determiners. The whole nominalised noun phrases acquire a definite or an indefinite article.
2. The verb in the verbal structure is made the head noun of the nominalised structure.
3. The verb loses its verbal inflections and takes on noun-like morphology.
4. The subject and direct object take on the possessive case.
5. Manner adverbs in the verbal structure, in most cases, become adjectives that modify the head noun in the nominalised noun phrases.

For example: *She correctly pronounced the word.* → Her correct pronunciation of the word

Structural adjustment 1: *She* → Her (the subject becomes the possessive determiner)

Structural adjustments 2 and 3: *pronounced* → pronunciation

- Structural adjustment 4: *the word* → of the word (the object becomes the genitive)
- Structural adjustment 5: *She correctly pronounced* → her correct pronunciation (the manner adverb ‘correctly’ becomes the adjective ‘correct’)

Halliday defines a grammatical metaphor as a substitution of one grammatical class or one grammatical structure by another. There are two main types of grammatical metaphor in a clause: metaphors of mood (including modality), and metaphors of transitivity and they are interpersonal metaphors and ideational metaphors in terms of model of semantic functions. Halliday (1994a, p. 106) mentions that the transitivity system construes the world of experience into a manageable set of process types. In the English transitivity system, there are six types of process: material, mental, relational, behavioural, verbal and existential processes and these can all be found in the grammatical categories. A process consists of three components: (1) the process itself; (2) participants in the process; (3) circumstances associated with the process. The transformations can be between the processes or a shifting of participants and circumstances. This is what Halliday reveals about grammatical metaphor.

The data analysis of grammatical metaphor in this section focuses mainly on the ideational metaphor or metaphor of transitivity because the metaphorical variants in the metaphor of mood and metaphor of modality mainly concern the spoken language. Mood expresses the speech function and the underlying pattern of organisation in the exchange system – giving or demanding information or goods/services, which determines the four basic functions of statement, question, offer and command (Halliday, 1985b, p. 342). According to Halliday (1985b, p. 340), the explicitly subjective and explicitly objective forms of modality are strictly speaking all metaphorical, since all of them represent the modality as being the substantive proposition. As a result, the data analysis in this section is undertaken on metaphor of transitivity.

Based on the above two nominalisation criteria and the use of metaphor of transitivity for data analysis, the expository writing exercises of both experimental and control groups at the three levels are examined. Firstly, the researcher reads the students' exercises to identify and categorise the different nominalised structures and metaphors of transitivity used, such as the total number of words in the text, number of clauses in the text, number of nominalised structures, number of metaphors of transitivity, the ratio of nominalised structures to the total number of clauses in the text, the ratio of nominalised structures to the total number of words in the text, and the ratio of the metaphors of transitivity to the total number of clauses and to the total number of words in the text. The researcher finally conducts the statistical analysis of the total and mean of each category to examine the extent of application of nominalised structures and metaphors of transitivity in the exercises of all the students. A sample statistical analysis of the application of nominalisation structures and the metaphors of transitivity is illustrated in the writing below titled "Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?" The structural adjustments of nominalisation are in bold and the metaphors of transitivity are underlined. The statistical analyses results are demonstrated in the table below.

- *Sample analysis*

Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?

In my opinion, women have been playing more and more important roles in our daily life with **the development of the society**. It is

necessary for the government to encourage a high-percentage of high-level jobs preserved for women.

First of all, women are as intelligent as men. Some people insist that men are more effective and sensible to their jobs than women do.

However, **the carefulness, seriousness and patience of women** are the superior qualities which men don't have. These good qualities will help undertake their jobs smoothly. Therefore, there is no need to worry about the women's intelligence.

Second, the view of gender prejudice should be badly abandoned. With **the tendency of the equal status of men and women**, more high-level jobs should be opened to women in order that women can share the interests that men have. Besides, **the women's preservation of high-level jobs** satisfies the need of society. A Chinese old saying goes like this, "If men and women share the same work in cooperation, the work will be completed much easier and quicker and they seem to feel no tiredness."

In short, **the great encouragement from the government of a high-percentage of high-level jobs preserved for women** should be given. If such efforts are taken, the balance of the society will be kept, and much more social fortunes will be made.

Table 5.2.3.: *Statistical analysis of nominalised structures and metaphors of transitivity*

Student number	C1	C2	C3	C4	C5	C6	C7	C8
1	224	13	5	1	38%	2.23%	7.7%	0.45%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Number of metaphors of transitivity

C5 = Ratio of nominalised structures to the total number of clauses in the text

C6 = Ratio of nominalised structures to the total number of words in the text

C7 = Ratio of the metaphors of transitivity to the total number of the clauses in the text

C8 = Ratio of the metaphors of transitivity to the total number of the words in the text

5.2.3.1. Statistical data analyses of the use of nominalisation and metaphors of transitivity in the pre-teaching writing exercises

The statistical data analyses of the pre-teaching writing exercises of the experimental and control groups at the three levels are undertaken according to the nominalisation and grammatical metaphor statistical data analysis methods¹. Comparison between the experimental and control groups at the elementary level is conducted first, and then the intermediate and advanced levels. Finally, the pre-teaching writing exercises between the experimental and control groups are compared. The statistical data analysis of the use of nominalisation and grammatical metaphors and the results are illustrated both by tables.

¹ 5.2.3.3 Grammatical metaphor statistical data analyses results

- **Comparison between experimental and control groups at elementary level**

Table 5.2.3.1a.: *Comparison of the use of nominalised structures in the pre-teaching writing exercises between the experimental group and control groups at the elementary level*

Group	Number of students	Elementary level				
		Total/Mean				
		C1	C2	C3	C4	C5
Experimental	30	5870/195.7	357/11.9	23/0.77	6.4%	0.39%
Control	30	5910/197	346/11.5	26/0.87	7.5%	0.44%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.2.3.1a illustrates the comparison of the use of nominalisation in the pre-teaching writing between the experimental and control groups at the elementary level. According to Table 5.2.3.1a, there are not many differences between the two groups in the total numbers of words (mean 195.7 vs. 197) and clauses (mean 11.9 vs. 11.5) in their texts. However, compared with the control group, the experimental group has fewer nominalised structures in their exercises (0.77 vs. 0.87). As can be seen from Table 5.2.3.1a, the students in the experimental group used less nominalised structures than the control group students. The ratio of nominalised structures to the total number of clauses and words in the texts of the two groups are 6.4% vs. 7.5% and 0.39% vs. 0.44% respectively. From the statistical results, it can be seen that the control group students used more nominalised structures in their writing, though the usage is limited.

- ***Comparison between experimental and control groups at intermediate level***

Table 5.2.3.1b.: *Comparison of the use of nominalised structures in the pre-teaching writing exercises between the experimental group and control groups at the intermediate level*

Group	Number of students	Intermediate level				
		Total/Mean				
		C1	C2	C3	C4	C5
Experimental	30	5957/198.6	380/12.7	30/1	7.9%	0.50%
Control	30	5935/197.8	385/12.8	29/0.97	7.5%	0.49%

C1 = Total number of words in the text C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.8.3.1b shows the comparison of the use of nominalisation in the pre-teaching writing exercises between the experimental and control groups at the intermediate level. As shown in the table above, the total number of words (mean 198.6 vs. 197.8) and the number of sentences (mean 12.7 vs. 12.8) in the text differs little between the two groups. Regarding the number of nominalised structures (mean 1 vs. 0.97), the ratio of the nominalised structures to the total number of clauses (7.9% vs. 7.5%) and words (0.5% vs. 0.49%) in the text, the differences still are not obvious, though the experimental group used slightly more nominalised structures in their writing.

- **Comparison between experimental and control groups at advanced level**

Table 5.2.3.1c. *Comparison of use of nominalisation in the pre-teaching writing exercises between the experimental and control groups at the advanced level*

Group	Number of students	Advanced level				
		Total/Mean				
		C1	C2	C3	C4	C5
Experimental	30	5896/196.6	388/12.9	38/1.27	9.8%	0.64%
Control	30	5879/195.9	389/12.97	35/1.17	8.99%	0.60%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.2.3.1c illustrates the comparison of the use of nominalisation in the pre-teaching writing exercises between the experimental and control groups at the advanced level. As can be seen from the table above, there is not much difference in the total numbers of words (mean 196.6 vs. 195.9). Total numbers of clauses in the texts also show minimal difference between the experimental and control groups (mean 12.9 vs. 12.97). Compared with the control group students, the experimental group students used more nominalised structures in their writing (mean 1.27 vs. 1.17). According to the table above, the ratios of nominalised structures to the total number of clauses (9.8% vs. 8.99%) and words (0.64% vs. 0.60%) in the exercises of the experimental group are both higher than those of the control group. Therefore, the experimental group students used more nominalised structures in their writing than the control group students.

- **Comparison between experimental and control groups at all three levels**

Table 5.2.3.1d.: *Analysis of the use of nominalisation in the pre-teaching writing exercises of the experimental group at all three levels*

Level	Number of students	Experimental group				
		Total/Mean				
		C1	C2	C3	C5	C6
Elementary	30	5870/195.7	357/11.9	23/0.77	6.4%	0.39%
Intermediate	30	5957/198.6	380/12.7	30/1	7.9%	0.50%
Advanced	30	5896/196.6	388/12.9	38/1.27	9.8%	0.64%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the total number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.2.3.1e.: *Analysis of the use of nominalisation in the pre-teaching writing exercises of the control group at all three levels*

Level	Number of students	Control group				
		Total/Mean				
		C1	C2	C3	C4	C5
Elementary	30	5910/197	346/11.5	26/0.87	7.5%	0.44%
Intermediate	30	5935/197.8	385/12.8	29/0.97	7.5%	0.49%
Advanced	30	5879/195.9	389/12.97	35/1.17	8.99%	0.60%

Tables 5.2.3.1d and 5.2.3.1e illustrate the use of nominalisation in the pre-teaching writing exercises of the experimental and control groups at all three levels. There are no obvious differences between the two groups in the total numbers of words (mean 195.7 vs. 197 (elementary); 198.6 vs. 197.8

(intermediate); 196.6 vs. 195.9 (advanced)) and clauses (mean 11.9 vs. 11.5 (elementary); 12.7 vs. 12.8 (intermediate); 12.9 vs. 12.97 (advanced)) in the texts. According to the table above, the numbers of nominalised structures in the exercises of the two groups (mean 0.77 vs. 0.87 (elementary); 1 vs. 0.97 (intermediate); 1.27 vs. 1.17 (advanced)) show that the intermediate and advanced students in the experimental groups employed more nominalised structures in their writing than the control group students (1 vs. 0.97 (intermediate); 1.27 vs. 1.17 (advanced)). However, the elementary level students in the experimental group used less normalised structures than the control group students (0.77 vs. 0.87). As a result, the ratios of nominalised structure to the total number of clauses and words in the exercises of the experimental groups at the intermediate and advanced levels are higher than the control groups (7.9% vs. 7.5% (intermediate); 9.8% vs. 8.99% (advanced)). Students at the elementary level are exceptional (6.4% vs. 7.5%).

5.2.3.2. Statistical analysis of nominalisation in the post-teaching writing exercises between the experimental and control groups at all three levels

According to the two nominalisation data analyses criteria, the statistical data analyses of the use of normalisation in the post-teaching writing exercises of the experimental and control groups at all three levels are conducted. The comparison between the experimental and control group at the elementary level is conducted first, and then the intermediate and advanced levels. Finally, the nominalisation data analyses and results are compared and illustrated by both tables.

- **Comparison between experimental and control groups at elementary level**

Table 5.2.3.2a.: *Comparison of the use nominalisation in the post-teaching writing exercises between experimental and control groups at the elementary level*

Group	Number of students	Elementary level				
		Total/Mean				
		C1	C2	C3	C4	C5
Experimental	30	5994/199.8	364/12.13	98/3.27	26.5%	1.52%
Control	30	6012/200	367/12.23	21/0.7	6.03%	0.37%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.2.3.2a shows the comparison of the use of nominalisation in the post-teaching writing exercises between the experimental and control groups at the elementary level. In the table above, the total numbers of words (mean 199.8 vs. 200) and clauses (mean 12.13 vs. 12.23) in the exercises of students of the two groups do not have any obvious differences. However, compared with the control group, the experimental group used much more nominalised structures in their writing (3.27 vs. 0.7). Therefore, the ratios of the nominalised structures to the total numbers of the clauses and words in the exercises of the experimental group are much higher than those of the control group.

- **Comparison between experimental and control groups at intermediate level**

Table 5.2.3.2b.: Comparison of the use nominalisation in the post-teaching writing exercises between experimental and control groups at the intermediate level

Group	Number of students	Intermediate				
		Total/Mean				
		C1	C2	C3	C4	C5
Experimental	30	5964/198	370/12.33	122/4.07	33.4%	1.99%
Control	30	6159/205	358/11.93	18/0.60	5.2%	0.62%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.2.3.2b illustrates the comparison of the use of nominalisation in the post-teaching writing exercises between the experimental and control groups at the intermediate level. As can be seen from the table above, the experimental group students' post-teaching writing exercises have fewer words but more clauses (mean 198 and 12.33), however, the control group students' post-teaching writing exercises have more words but fewer clauses (mean 205 and 11.93). Compared with the control group students' exercises, the experimental group students' exercises contain many more nominalised structures (mean 4.07 vs. 0.60), so the ratios of nominalised structures to the total number of the sentences and total number of words in the exercises of the experimental group students are much higher than those of the control group (ratio 33.4% vs. 5.2% and 1.99% vs. 0.62%). As a result, the experimental group students used nominalisation more often than the control group students.

- **Comparison between experimental and control groups at advanced level**

Table 5.2.3.2c.: *Comparison of the use nominalisation in the post-teaching writing exercises between experimental and control groups at the advanced level*

Group	Number of students	Advanced level				
		Total/Mean				
		C1	C2	C3	C4	C5
Experimental	30	5776/192.5	385/12.83	128/4.27	33.32%	2.15%
Control	30	5995/199.8	392/13.07	29/0.97	7.33%	0.49%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.2.3.2c shows the comparison of the use of nominalisation in the post-teaching writing exercises between the experimental and control groups at the advanced level. As shown in the table above, the exercises of the experimental group have fewer words and clauses in the text than those of the control group (192.5 vs. 199.8 and 12.83 vs. 13.07). However, with regard to nominalised structures used in the students' exercises, the experimental group used much more normalisation than the control group (4.27 vs. 0.97). Therefore, when compared with the control group students, the experimental group students used nominalisation significantly more often than the control group students. The ratio of nominalised structures to the total numbers of clauses and words in the exercises of the experimental and control groups are 33.32% vs. 2.15% and 7.33% vs. 0.49%.

- **Comparison between the experimental and control groups at all three levels**

Table 5.2.3.2d.: *Statistical analysis of the use of nominalisation in the post-teaching writing exercises of the experimental group at all three levels*

Level	Number of students	Experimental group				
		Total/Mean				
		C1	C2	C3	C4	C5
Elementary	30	5994/199.8	364/12.13	98/3.27	794.3/26.5%	45.64/1.52%
Intermediate	30	5964/198	370/12.33	122/4.07	1002.3/33.4%	59.71/1.99%
Advanced	30	5776/192.5	385/12.83	128/4.27	999.6/33.32%	64.48/2.15%

C1 = Total number of words in the text

C2 = Number of clauses in the text

C3 = Number of nominalised structures

C4 = Ratio of nominalised structures to the number of clauses in the text

C5 = Ratio of nominalised structures to the total number of words in the text

Table 5.2.3.2e.: *Statistical analysis of the use of nominalisation in the post-teaching writing exercises of the control group at all three levels*

Level	Number of students	Control group				
		Total/Mean				
		C1	C2	C3	C4	C5
Elementary	30	6012/200	367/12.23	21/0.7	181/6.03%	10.98/0.37%
Intermediate	30	6159/205	358/11.93	18/0.60	156/5.2%	9.23/0.62%
Advanced	30	5995/199.8	392/13.07	29/0.97	220/7.33%	14.67/0.49%

Tables 5.2.3.2d and 5.2.3.2e illustrate the statistical data analyses of the use of nominalisation in the post-teaching writing exercises of the experimental and control groups at all three levels. The post-teaching writing exercises of the

experimental groups at all three levels contain fewer words in total than the exercises of the control groups (mean 199.8 vs. 200 (elementary); 198 vs. 205 (intermediate); 192.5 vs. 199.8 (advanced)). With regard to the total numbers of clauses, the control group students at the elementary and advanced levels had more clauses in their exercises than the experimental group students (mean 12.23 vs. 12.13 (elementary); 13.07 vs. 12.83 (advanced)). However, experimental group students at the intermediate level had more clauses than the control group students at the same level (mean 12.33 vs. 11.93). Compared with the control groups at all three levels, the experimental groups used more nominalisation in their exercises (3.27 vs. 0.7 (elementary); 4.07 vs. 0.60 (intermediate); 4.27 vs. 0.97 (advanced)). As can be seen from the tables, the ratios of nominalised structures to the total number of the clauses and words in the exercises of the experimental groups at all three levels are significantly higher than those of the control groups at all levels (26.5% vs. 6.03% (elementary); 33.4% vs. 5.2% (intermediate); 33.32% vs. 7.33% (advanced) and 1.52% vs. 0.37% (elementary); 1.99% vs. 0.62% (intermediate); 2.15% vs. 0.49% (advanced)).

According to the above statistical analysis of the use of nominalisation in the pre-teaching and post-teaching writing exercises of the experimental and control groups at all three levels, the experimental groups at the intermediate and advanced levels employed more nominalised structures in their pre-teaching writing exercises than their control counterparts (1 vs. 0.97 (intermediate); 1.27 vs. 1.17 (advanced)). However, the experimental group students at the elementary level used fewer nominalised structures than the corresponding control group (mean 0.77 vs. 0.87). Compared with the control group students at all three levels, the experimental group students used more nominalised structures in their post-teaching writing exercises (mean 3.27 vs. 0.7 (elementary); 4.07 vs. 0.60 (intermediate); 4.27 vs. 0.97 (advanced)). On the basis of the statistical results, large differences in their writing can be seen between the experimental and control groups at all three levels after the

experimental groups have been taught the SFL grammatical feature of nominalisation. The experimental groups demonstrated higher awareness of nominalisation in their post-teaching writing exercises and their writing tend to be more formal and academic in style.

5.2.3.3. Statistical analysis of grammatical metaphor in the pre-teaching writing exercises of the experimental and control groups at all three levels

Grammatical metaphor is a substitution of one grammatical class or grammatical structure by another. As mentioned before that in Halliday's framework, there are three modes of meaning encoded in a clause: textual, interpersonal, and ideational. The ideational meaning of the clause refers to the way human experience is represented in the clause in terms of its transitivity structure and Halliday's analysis of nominalisation is relevant to the transitivity structure. As some of the features of grammatical metaphor have been included in nominalisation data analysis section, the statistical data analysis of grammatical metaphor in this section focuses mainly on grammatical metaphor of transitivity. For example,

They arrive at the summit *on the fifth day*. (Circumstance: time)

The fifth day saw them at the summit. (Participant/Senser)

As nominalisation and grammatical metaphor are jointly analysed, the grammatical metaphors used by the students in their pre-teaching writing exercises are sequentially categorised as C6 = Number of metaphors of transitivity, C7 = Ratio of the metaphors of transitivity to the number of clauses in the text, and C8 = Ratio of the metaphors of transitivity to the total number of words in the text. The statistical data analysis results are illustrated by table.

- ***Comparison between the experimental and control groups at elementary level***

Table 5.2.3.3a.: *Comparison of the use of grammatical metaphor in the pre-teaching writing exercises between the experimental and control groups at the elementary level*

Group	Number of students	Elementary level		
		Total/Mean		
		C6	C7	C8
Experimental	30	14/0.47	4.37%	0.26%
Control	30	15/0.5	4.4%	0.26%

C6 = Number of metaphors of transitivity

C7 = Ratio of metaphors of transitivity to the number of clauses in the text

C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.3a illustrates the comparison of the use of grammatical metaphors in the pre-teaching writing exercises between the experimental and control groups at the elementary level. As can be seen from the table above, the experimental group at the elementary level used metaphors of transitivity structures in their pre-teaching writing exercises almost as often as the students in the control group (mean 0.47 vs. 0.50). According to the table, the ratio of metaphors of transitivity to the total number of clauses in the text and the ratio of the metaphors of transitivity to the total number of words in the exercises of the two groups are also similar (4.37% vs. 4.4% and 0.26% vs. 0.26).

- ***Comparison between experimental and control groups at intermediate level***

Table 5.2.3.3b.: *Comparison of the use of grammatical metaphor in the pre-teaching writing exercises between the experimental and control groups at the intermediate level*

Group	Number of students	Intermediate level		
		Total/Mean		
		C6	C7	C8
Experimental	30	16/0.53	4.6%	0.27%
Control	30	17/0.56	4.65%	0.27%

C6 = Number of metaphors of transitivity

C7 = Ratio of metaphors of transitivity to the number of clauses in the text

C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.3b shows the comparison of the use of grammatical metaphors in the pre-teaching writing exercises between the experimental and control groups at the intermediate level. As shown in the table above, the number of metaphors of transitivity used in the writing exercises of the control group is slightly higher than that of the experimental group (mean 0.56 vs. 0.53). With regard to the ratio of metaphors of transitivity to the total number of clauses in the text, the control group students used metaphors of transitivity more often than the experimental group students (mean 4.65% vs. 4.6%). In addition, regarding the ratio of metaphors of transitivity to the total number of words in the text, the experimental group has the same ratio as the control group (0.27% vs. 0.27%).

- **Comparison between experimental and control groups at advanced level**

Table 5.2.3.3c.: *Comparison of the use of grammatical metaphor in the pre-teaching writing exercises between the experimental and control groups at the advanced level*

Group	Number of students	Advanced level		
		Total/Mean		
		C6	C7	C8
Experimental	30	16/0.53	4.6%	0.27%
Control	30	15/0.5	4.4%	0.26%

C6 = Number of metaphors of transitivity

C7 = Ratio of metaphors of transitivity to the number of clauses in the text

C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.3c is the comparison of the use of grammatical metaphors in the pre-teaching writing exercises between the experimental and control groups at the advanced level. As can be seen from the table above, the students in the experimental group used more metaphors of transitivity in their writing than the control group students (mean 0.53 vs. 0.5). Regarding the ratio of the metaphors of transitivity to the total number of clauses in the text and ratio of the metaphors of transitivity to the total number of words in the text, the experimental group students also have higher ratios than the control group students (4.6% vs. 4.4% and 0.27% vs. 0.26%).

- **Comparison between experimental and control groups at all three levels**

Table 5.2.3.3d.: *Comparison of the use of grammatical metaphor in the pre-teaching writing exercises between the experimental and control groups at all three levels*

Level	Number of students	Experimental group		
		Total/Mean		
		C6	C7	C8
Elementary	30	14/0.47	4.37%	0.26%
Intermediate	30	16/0.53	4.6%	0.27%
Advanced	30	16/0.53	4.6%	0.27%

C6 = Number of metaphors of transitivity

C7 = Ratio of metaphors of transitivity to the number of clauses in the text

C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.3e.: *Statistical analysis of the use of grammatical metaphors in the pre-teaching writing exercises of the control groups at all three levels*

Level	Number of students	Experimental group		
		Total/Mean		
		C6	C7	C8
Elementary	30	15/0.5	4.4%	0.26%
Intermediate	30	17/0.56	4.65%	0.27%
Advanced	30	15/0.5	4.4%	0.26%

Tables 5.2.3.3d and 5.2.3.3e illustrate the statistical analyses of the use of grammatical metaphors in the pre-teaching writing exercises of the experimental and control groups at all three levels. As shown in the tables above, the control group students at the elementary and intermediate levels used more metaphors of transitivity in their exercises than the experimental group students (mean 0.5 vs. 0.47 (elementary); 0.56 vs. 0.53 (intermediate)).

However, the control group students at the advanced level employed fewer metaphors of transitivity in their writing than the experimental group (mean 0.5 vs. 0.53). Regarding the ratio of the metaphors of transitivity to the total number of clauses in the text, the experimental and control groups at the elementary level students have the same ratio (4.4% vs. 4.4%). However, the experimental group students at the intermediate level have a lower ratio than the control group students (4.6% vs. 4.7%). Compared with the control group students at the advanced level, the experimental group students have a higher ratio than the control group students (4.6% vs. 4.4%). Regarding the ratio of metaphors of transitivity to the total number of words in the text, there are no obvious differences between the two groups (0.26% vs. 0.26% (elementary); 0.27% vs. 0.27% (intermediate); 0.27% vs. 0.26% (advanced)).

5.2.3.4. Statistical analysis of grammatical metaphor in the post-teaching writing exercises of the experimental and control groups at all three levels

- *Comparison between experimental and control groups at the elementary level*

Table 5.2.3.4a.: *Comparison of the use of grammatical metaphor in the post-teaching writing exercises between the experimental and control groups at the elementary level*

Group	Number of students	Elementary level		
		Total/Mean		
		C6	C7	C8
Experimental	30	28/0.93	243.1/8.1%	14.3/0.47%
Control	30	14/0.47	131.2/4.37%	7.71/0.26%

C6 = Number of metaphors of transitivity

C7 = Ratio of metaphors of transitivity to the number of clauses in the text

C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.4a illustrates the comparison of the use of grammatical metaphors in the post-teaching writing exercises between the experimental and control groups at the elementary level. As can be seen from the table above, the experimental group at the elementary level used more metaphors of transitivity in their post-teaching writing exercises than the control group (mean 0.93 vs. 0.47). Regarding the ratio of metaphors of transitivity to the total number of clauses in the text, and the ratio of metaphors of transitivity to the total number of words in a text, the experimental group students at the elementary level have much higher ratios than the control group students (8.1% vs. 4.37% and 0.47% vs. 0.26%).

- Comparison between experimental and control group of the intermediate level***

Table 5.2.3.4b.: *Comparison of the use of grammatical metaphor in the post-teaching writing exercises between the experimental and control groups at the intermediate level*

Group	Number of students	Intermediate level		
		Total/Mean		
		C6	C7	C8
Experimental	30	31/1.03	259/8.6%	15.58/0.52%
Control	30	22/0.73	196.7/6.56%	11.84/0.40%

C6 = Number of metaphors of transitivity
C7 = Ratio of metaphors of transitivity to the number of clauses in the text
C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.4b shows the comparison of the use of grammatical metaphors in the post-teaching writing exercises between the experimental and control groups at the intermediate level. As shown in the table above, the students in the experimental group at the intermediate level used more metaphors of transitivity in their exercises than the control group students (mean 1.03 vs. 0.73). With regard to the ratio of the metaphors of transitivity to the total

number of clauses in the text, and the ratio of the metaphors of transitivity to the total number of words in the text, the experimental group at the intermediate level also has higher ratios than the control group (9.4% vs. 6.53% and 0.63% vs. 0.41%).

- **Comparison between experimental and control groups at the advanced level**

Table 5.2.3.4c.: Comparison of the use of grammatical metaphor in the post-teaching writing exercises between the experimental and control groups at the advanced level

Group	Number of students	Advanced level		
		Total/Mean		
		C6	C7	C8
Experimental	30	36/1.2	283/9.4%	18.86/0.63%
Control	30	25/0.83	195.9/6.53%	12.37/0.41%

C6 = Number of metaphors of transitivity

C7 = Ratio of metaphors of transitivity to the number of clauses in the text

C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.4c illustrates the comparison of the use of grammatical metaphors in the post-teaching writing exercises between the experimental and control groups at the advanced level. It can be seen from the table that the experimental group students at the advanced level employed more metaphors of transitivity in their post-teaching writing exercises than the control group students (mean 1.20 vs. 0.83). Compared with the control group students at the advanced level, the ratio of metaphors of transitivity to the total number of clauses in the text, and the ratio of metaphors of transitivity to the total number of words in the text of the experimental group students are at much higher (9.4% vs. 6.53% and 0.63% vs. 0.41%).

• **Comparison between experimental and control groups at all three levels**

Table 5.2.3.4d.: *Statistical analysis of the use grammatical metaphors in the post-teaching writing exercises of the experimental groups at all three levels*

Level	Number of students	Experimental group		
		Total/Mean		
		C6	C7	C8
Elementary	30	28/0.93	243.1/8.1%	14.3/0.47%
Intermediate	30	31/1.03	259/8.6%	15.58/0.52%
Advanced	30	36/1.2	283/9.4%	18.86/0.63%

C6 = Number of metaphors of transitivity

C7 = Ratio of metaphors of transitivity to the number of clauses in the text

C8 = Ratio of metaphors of transitivity to the total number of words in the text

Table 5.2.3.4e.: *Statistical analysis of the use grammatical metaphors in the post-teaching writing exercises of the control group at all three levels*

Level	Number of students	Experimental group		
		Total/Mean		
		C6	C7	C8
Elementary	30	14/0.47	131.2/4.37%	7.71/0.26%
Intermediate	30	22/0.73	196.7/6.56%	11.84/0.40%
Advanced	30	25/0.83	195.9/6.53%	12.37/0.41%

Tables 5.2.3.4d and 5.2.3.4e are the comparison of the use of grammatical metaphors in the post-teaching writing exercises between the experimental and control groups at all three levels. In general, the experimental group students at all three levels employed more metaphors of transitivity in their post-teaching writing exercises than the control group students. As can be seen from the tables above, the experimental group students at all three levels used more metaphors of transitivity in their post-teaching writing exercises than the

control group students (mean 0.93 vs. 0.47 (elementary); 1.03 vs. 0.73 (intermediate); 1.20 vs. 0.83(advanced)). Compared with the control group students at all three levels, the ratio of metaphors of transitivity to the total number of clauses in the text (8.1% vs. 4.37% (elementary); 8.6% vs. 6.56% (intermediate); 9.4% vs. 6.53% (advanced)) and the ratio of metaphors of transitivity to the total number of words in the text (0.47% vs. 0.26% (elementary); 0.52% vs. 0.40% (intermediate); 0.63% vs. 0.41% (advanced)) of the experimental group students are a lot higher.

According to the above statistical data analyses, the experimental group students at all three levels had a higher awareness of grammatical metaphor of transitivity when they wrote their exercises. The ratio of metaphors of transitivity to the total number of clauses in the text, and the ratio of metaphors of transitivity to the total number of words in the post-teaching exercises of the experimental groups at all the three levels are much higher than in the pre-teaching writing exercises and big differences can be seen between the pre-teaching writing and post-teaching writing exercises. However, the control group students at all three levels have not shown much awareness of grammatical metaphors of transitivity and there are not many differences between the pre-teaching writing and post-teaching writing exercises with regard to the ratio of metaphors of transitivity to the total number of clauses in the text and the ratio of metaphors of transitivity to the total number of words in the text. Therefore, teaching students grammatical metaphor can develop help students develop an awareness of using incongruent expressions in their writing and improve their writing effectiveness.

5.2.4. Data analyses of students' exercises

The students' exercises are one of the main tools to gauge the students' understanding of the grammatical features; the effectiveness of these features

in improving writing skills; the problems and difficulties in using these features; and also the reasons why the students can or cannot use the features properly. In the data analysis section of the students' exercises, the students' exercises of the experimental groups who have had the SFL lessons at all three levels are examined to find out their SFL awareness and application. The researcher divides the students' exercises according to the four grammatical features into categories of Theme and Rheme, Lexical density, Nominalisation and Grammatical metaphor. The data analysis methods are shown below and the analyses in this section serve Research Objective 3.

5.2.4.1. Data analysis of the students' Theme and Rheme exercises

In the Theme and Rheme section, according to the key points of the grammatical feature of Theme and Rheme and the forms of students' exercises, the following three main aspects are examined by the researcher to evaluate the students' Theme and Rheme learning process and to check how well they have mastered the knowledge and what the difficulties and problems are in apply the feature. The three aspects are:

1. Identify the Themes and Rhemes (10 sentences);
2. Draw the Thematic progression pattern of the given paragraph (1 paragraph);
3. Application: Write a paragraph and draw the thematic progression pattern (1 paragraph);

Each exercise is analysed individually to determine the student's performance in the above three aspects. Difficulties and problems in application found during the data analyses are noted down under the respective exercise numbers of the tables (Table 5.2.4.1a, b, c, d) designed. The application of the five

Thematic progression patterns in Exercise 4 by the students at different levels is also noted down and illustrated by the table (Table 5.2.4.1d) designed.

Exercise 1: Please identify and underline the Themes in the following clauses.

In Exercise 1, the Theme decision is made based on the criteria of Halliday (1994a, p. 38). Theme is the starting-point of the message; it is the ground from which the clause is taking off. Theme of a clause consists of just one structural element, and that element is represented by just one unit – one nominal group, adverbial group or prepositional phrase. The Theme decision is also made by the choice of mood (Halliday, 1994a, pp. 42-48). The number of students who made mistakes in the choice of Theme at different levels and the wrong choices of Theme are noted down under the item number and the level of the student. The correct Theme in each item listed below is underlined and the results are illustrated by the table below.

1. You probably haven't heard of the SOU before. (Thompson, 1996)
2. The languages that the Eskimo people speak around the top of the world, in places as far apart as Siberia, Alaska, Canada, and Greenland, differ quite a lot in details of vocabulary. (Thompson, 1996)
3. What he ate that night gave him terrible heartburn. (Martin, Matthiessen, & Painter, 1997)
4. This large sixth form college is one of only two offering boarding accommodation. (Adjunct as Theme)(Thompson, 1996)
5. Out of Britain's 37 most senior judges, only one is a woman. (Adjunct as Theme)(Martin, Matthiessen, & Painter, 1997)

Table 5.2.4.1a.: *Number of students making mistakes in identifying the Themes and Rhemes in the exercise*

Student level	Number of students	Item 1	Item 2	Item 3	Item 4	Item 5
Elementary	30	0	0	5 What he ate What	0	0
Intermediate	30	0	0	3 What he ate What	0	0
Advanced	30	0	0	2 What he ate What	0	0

Discussions: According to the above mistakes recorded in Table 5.2.4.1a, the students' mistakes arise mainly from difficulty in recognising longer Themes. It is not difficult for them to recognise an unmarked Theme such as *You* or *This large sixth form college* because the Theme is constituted by a pronoun or a short nominal group. Both Items 2 and 3 have longer Themes, but the students had no problems recognising the Theme with the attributive clause in Item 2. Item 3 is different from Item 2 which embeds a wh- clause in the Theme *What he ate that night* (unmarked Theme). However, the students separated the clause rather than considered it as a whole. Some of them chose *What he ate* but they did not include *that night* which is also part of the embedded clause. Others chose *What* as the Theme because they thought that *What* is at the starting point of the message. In this case, recognising longer Themes should be noticed in teaching.

Exercise 2: Identify the topical Theme and classify it as unmarked or marked.

In Exercise 2, the marked or unmarked topical Theme is identified in each item. The criteria of deciding whether the Theme is marked or unmarked Theme are based on Halliday's "Theme and mood" and "clause as message" (1994a, pp. 42-48). The concepts of marked and unmarked Themes are important to clarify the idea of the subject and the Theme. Unmarked Theme is the subject which is chosen as Theme and marked Theme is a Theme that is something other than the subject. In terms of the Theme concepts, the students' exercises at different levels are examined. The incorrect judgements are noted down under the respective item numbers at each level. The number of students' mistakes in identifying marked or unmarked Themes is illustrated by the table below.

1. *My car* is the same colour as yours. (U)
2. *For at least two hours* the boy loved him...(M)
3. *Last night* a man was helping with police inquiries. (M)
4. *Everybody* sits out there at this time of the year. (U)
5. *After the dinner*, what did you do? (M)

Table 5.2.4.1b.: Number of students making mistakes in identifying the marked and unmarked Themes in the exercise

Student level/number	Item 1	Item 2	Item 3	Item 4	Item 5
Elementary 30	0	10 For at least two hours the boy	10 Last night a man	0	13 After the dinner, what
Intermediate 30	0	5 For at least two hours the boy	5 Last night a man	0	9 After the dinner, what
Advanced 30	0	3 For at least two hours the boy	3 Last night a man	0	7 After the dinner, what

Discussions: According to the mistakes recorded in Table 5.2.4.1b, the students' mistakes mainly arise from recognising wrongly marked topical Themes (Items 2, 3 and 5). If the first topical element of a declarative clause is also the subject of the clause, then the Theme is a neutral or unmarked one. However, when the topical Theme of a declarative clause is not the subject, it gains a greater textual prominence. Non-subject Themes are marked Themes and are often important in structuring the larger discourse (Martin, Matthiessen, & Painter, 1997). Regarding the mistakes made in the three items, the students had problems having a clear idea about the boundary between Theme and Rheme. According to Martin, Matthiessen and Painter (1997), Theme is a pulse of information at the beginning of the clause which tapers into Rheme. The principle to remember is that everything up to and including the first topical element will be counted as the Theme. The students were confused about the idea of textual Theme + topical Theme such as *And then we'll go out*. In this clause, *And then* is the textual Theme and *we* is the topical Theme. In Items 2 and 3, the students mistook the *For at least two hours* and *Last night* as textual Themes and therefore considered *the boy* and *a man* together with the front parts as topical Themes. However, Item 5 is a bit different. Normally, in a question the WH-word or group that almost invariably appears in Theme position because it is the natural starting-point the questioner wants to know about. However, in Item 5, the WH-word does not appear in the first position, the Theme should be the marked Theme *After the dinner*, though marked Themes are relatively rare in questions.

Exercise 3: According to the thematic progression patterns we have learnt in this unit, rearrange each group of the following sentences, so as to make it a coherent and logical paragraph and then draw the thematic pattern of the paragraph.

From a functional clause perspective, the sending of the information in a text is signposted by placing elements from the Rheme of one clause into the

Theme of the next, or by repeating the meaning of the Theme of one clause in the Theme of the subsequent clauses (Butt, Fahey, Spinks, & Yallop, 1997). In this way, the relationship between clauses in a text is developed logically and coherently and the cohesion in the text is also improved. According to the above Thematic progression theory, in Exercise 3, the students' awareness of the relationship between Theme and Rheme in the Thematic progression pattern and the process of how information is sent in a text is examined. The number of students who were poor in rearranging the clauses in a cohesive or logical manner is recorded under the respective item numbers at each level. The number of students at each level who have not rearranged the clauses according to the expected order is illustrated by the table below.

- A. Of the effects caused by vitamin A deficiency, those involving eye diseases are the most pronounced and widespread.
- B. Another result of vitamin A deficiency is skin dryness.
- C. What children eat can affect their health.
- D. Several thousand children become blind each year because of this dietary deficiency, which is most prevalent in poor, non-industrialised countries.
- E. Children who do not eat enough foods containing vitamin A can develop serious nutritional disorders.

C → E → A → D → B (Expected order)

C -----E (Parallel)

E ----- A (Continuous)

D ----- A (Centralised)

D ----- B (Continuous)

Table 5.2.4.1c.: *Number of students who have not rearranged the clauses according to the expected order*

Student level	Number of students	Number of students' not arranging the clauses according to the expected order
Elementary	30	6
Intermediate	30	4
Advanced	30	3

Discussion: There are three main reasons why the students had illogical clause order. Firstly, they identified the Themes and Rhemes wrongly or could not find the logical connection between the Theme or Rheme in the one clause and the next. Secondly, the students made the unexpected choice of the topic sentence. Thirdly, they ignored the reference in the previous clauses.

According to the above three possible reasons, enhancing students' ability in correctly identify the topical clause is most important as the Theme or the Rheme in the topical clause decides the development of the text.

Exercise 4: Please write a paragraph with at least 4 sentences and then draw the thematic pattern.

In Exercise 4, the students' awareness of text cohesion and their application of the theory on

Theme and thematic progression patterns are examined. When the students write a paragraph, they have to not only consider the choice of Theme but also pay attention to the relationship of Theme and Rheme among the clauses in a text. The students' awareness of sending information of the elements from the Rheme of one clause into the Theme of the next, or repeating meanings from the Theme of one clause into the Theme of subsequent clauses is examined. The assessment is based on the five thematic progression patterns which the students have learnt. A sample writing and its Thematic progression pattern is

presented below. In addition, the number of students at different levels who used one of the five Thematic progression patterns is recorded in and illustrated by the table below.

The five thematic progression patterns are:

1. Parallel progression: This pattern keeps the same topical Theme (T) in focus throughout a sequence of clauses. Information is built up in the Rheme (R) of each clause.
2. The continuous, linear or “zig-zag” progression: In this sequence, an element that is first introduced in the Rheme of a clause becomes the Theme of the next clause, and so on. Each R becomes the T of the next utterance.
3. The crisscross progression: The Theme in the first clause becomes the Rheme in the second clause and the Theme in the second clause becomes the Rheme of the third clause and so on.
4. The split Rheme pattern: The Rheme of a clause contains an element which can be split up and used as the Themes of subsequent clauses.
5. Centralised progression: Each clause has got different Themes but the same Rheme.

- ***Sample analysis (Themes are in italics and the rest are Rhemes)***

The dog of my neighbour is very beautiful, but I do not like it. It always barks at night time. The barking often destroys the beautiful dreams of the neighbours and the peacefulness and quietness of the lovely night. They are very frustrated whenever this happens.

T1 ----- R1

T2 (R1) ----- R2

T3 (R2) ----- R3

T4 (R3) ----- R4

This is a continuous thematic progression pattern. In this sequence, an element that is first introduced in the Rheme of a clause becomes the Theme of the next clause, and so on. Each R becomes the T of the next utterance.

Table 5.2.4.1d.: *Application of thematic progression patterns in the students' exercises*

Student level	Number of students	C1	C2	C3	C4	C5	C6
Elementary	30	9/30%	6/20%	5/16.7%	6/20%	1/3.3%	3/10%
Intermediate	30	10/33.3%	9/30%	4/13.3%	5/16.7%	1/3.3%	1/3.3%
Advanced	30	8/26.7%	8/26.7%	5/16.7%	3/10%	3/10%	3/10%

C1 = Parallel progression

C2 = Continuous progression

C3 = Crisscross progression

C4 = Split Rheme pattern

C5 = Centralised progression

C6 = Wrong application

Discussion: Table 5.2.4.1d illustrates the statistical analysis results of the application of thematic progression patterns in the experimental group students' exercises at all three levels. As can be seen from the table above, 90% of the elementary level students used thematic progression patterns, among which 30% used the parallel progression patterns, 20% used the continuous progression patterns and 16.7%, 20% and 3.3% used the crisscross progression, split Rheme and centralised patterns respectively. As for the intermediate level, 96.7% of the students wrote the paragraphs using thematic progression patterns. Among them 33.3% employed the parallel progression patterns, 30% used the continuous progression patterns and 13.3%, 16.7% and 3.3% used the

crisscross progression, split Rheme and centralised patterns respectively. At the advanced level, 90% of the students used thematic progression patterns. Among them 26.7% used the parallel progression patterns, and the same for the continuous progression patterns, 16.7%, 10% and 10% used the crisscross progression, split Rheme and centralised patterns respectively. From the statistical results, the research is delighted to note that, on average, 92% of the students can manage to pick a thematic progression pattern and write a very short paragraph. However, the results in the students post-teaching writing exercises are not as good as what they did in this exercise. The students still lack a comprehensive awareness of using thematic progression patterns in their writing. Therefore, developing the students' application of thematic progression patterns in writing a text is important.

5.2.4.2. Data analysis of the lexical density of the students' exercises

Halliday and Martin (1993) define lexical density as a measure of the density of information in any passage of text, according to how tightly the lexical items (content words) have been packed into the grammatical structure. Lexical density tends to be low in spoken language typically with about two lexical words per clause. However, written language tends to be lexically denser than spoken language with around four to six lexical words per clause. In this section, data analyses of the lexical density of individual student's exercises are conducted separately to examine the student's awareness and application of lexical density in the student's writing. The analysis includes identifying lexical words, calculating lexical density and its application. The students' exercises are examined according to the criteria of each exercise and the results are recorded in the table below.

Exercise 1: Identify the content words and function words in the following clauses. (The lexical words are in bold.)

In Exercise 1, the students’ awareness of lexical words is examined. According to Eggins (1994, pp. 60-61), content-carrying words include nouns, the main part of the verb, adverbs and adjectives. Non-content carrying words include prepositions, conjunctions, auxiliary verbs and pronouns. Grammatical/function words have little lexical meaning but they express grammatical relations with other words within a clause, or specify the attitude or mood of the speaker. A table is designed to record the students’ incorrect identification of content/lexical and function/grammatical words.

1. The *dogs ran* in the *garden*.
 Content words: dogs, ran, garden
 Function words: The, in, the

2. They *want to go* to *school*.
 Content words: want, go, school
 Function words: They, to, to

3. *Rich students live* in *beautiful big houses*.
 Content words: Rich students, live, beautiful big houses
 Function words: in

Table 5.2.4.2a.: *Number of students who incorrectly identified the content/lexical and function/grammatical words*

Level	Number of students	Content/Lexical words	Function/Grammatical words	Incorrect identification
Elementary	30	0	1	3. beautiful, big, rich
Intermediate	30	0	0	0
Advanced	30	0	0	0

Discussion: Table 5.2.4.2a shows the number of students who incorrectly identified the content/lexical and functional/grammatical words. As can be seen from the table, amongst all three levels only one student wrongly identified adjectives as function words.

Exercise 2: Consider the ratio of the content words to the total number of words in the clauses. Underline the content words and then calculate the ratio of each clause.

According to the concept of lexical density, it is important for the students to know the ratio of the number of content/lexical words to the total number of words in the clause. There are three reasons:

1. It helps the students realise how many content words are there in the clause.
2. It helps the students to get to know how many meanings are packed into the clause.
3. It helps to calculate lexical density as lexical density is crucial in distinguishing spoken and written English.

In Exercise 2, the students were asked to mark the ratio of content words to the total number of words in each clause. The number of students who had the wrong ratio is presented in the table below.

1. I *worked* here. (1/3)
2. I *bought* a *huge* *bike*. (3/5)
3. *Stupid* *people* *work* *carelessly*. (4/4)

Table 5.2.4.2b.: Incorrect identification of content words

Level	Number of students	Number of students who had the ratio wrong	Item number of the incorrect ratio
Elementary	30	8	1. here
Intermediate	30	1	2. carelessly
Advanced	30	0	-

Discussion: Table 5.2.4.2b illustrates the number of students who incorrectly identified the content words. It can be seen from the table that eight students at the elementary level incorrectly identified the word *here* in Item 1 as a content/lexical word, and one student at intermediate level incorrectly identified the word *carelessly* as a functional/grammatical word. The word *here* in Item 1 is an adverb of place which has not clear identification of a certain place, such as school, hospital, etc. and it has no important meaning in the message. However, whether *here* is a functional/grammatical word or a content/lexical word depends on the context. In this example, *This is a world famous company and he has worked in here for many years*, *here* should be a content word because it refers to the *world famous company* and *here* in this context is a word with lexical meaning. Different from *here*, the word *carelessly* is an adverb of manner which conveys important meaning and it also has clear lexical meaning. So, *carelessly* is definitely a content/lexical word. According to the above results in the students' exercises, the teaching of lexical density should focus on not only the general features but also the specific ones.

Exercise 3: Read the clauses below and then underline the content words in each clause. Count the content words and see how much information there is in the grammatical structure.

Halliday and Martin (1993, p. 76) point out that written language tends to be lexically denser than spoken language, often having around four to six lexical

words per clause. High lexical density is also the characteristic of scientific writing because in scientific writing, almost all the lexical items in any clause occur inside just one or two nominal groups (noun phrases). The hardest examples to process are those which consist of strings of lexical words without any grammatical words in between. When the lexical density goes up to this extent, the passage becomes difficult to read. In Exercise 3, the students were asked to find out the number of content words in each clause and to tell how many meanings were packed into the clauses (which are listed below). This exercise helps to develop the students' awareness of lexically dense clauses and the characteristic of scientific writing. The number of students who incorrectly identified the lexical words and the incorrectly identified words are recorded in the table below.

1. Magnetic materials are materials that are attracted to magnets. (5)
2. In a chemical change, the materials break down completely. (6)
3. Materials that can carry electricity are called conductors – they conduct electricity. (6)
4. My mother used to tell me about the singer in her town. (4)
5. I'm going to the shop to get some food for the dinner. (3)

Table 5.2.4.2c.: Number of students who incorrectly identified the lexical words and the incorrectly identified words

Level	Number of students	Number of wrongly identified lexical words	Incorrectly identified words
Elementary	30	Item 1: 8 Item 2: 14 Item 3: 13 Item 4: 12 Item 5: 10; 12	are break down called used to I'm going to; get
Intermediate	30	Item 1: 1 Item 2: 17 Item 3: 15 Item 4: 2 Item 5: 4; 10	are break down called used to I'm going to; get
Advanced	30	Item 1: 2 Item 2: 12 Item 3: 20 Item 4: 9 Item 5: 10; 25	are break down called used to I'm going to; get

Discussions: As shown in the table above, in every item of the five items, there are students who incorrectly identified the content words regardless of their levels. In Item 1, eight students at elementary level, one at intermediate level and two at advanced level underlined *are* as a content word incorrectly. *Are* should be a link verb here which is a function word. In Item 2, 14, 17 and 12 students at the elementary, intermediate and advanced levels respectively underlined the phrase *break down* incorrectly. As can be seen from the statistics above, almost half or more than half of the students at each level

considered *break* rather than *break down* as a content word. The possible reasons can be summarised as: (1) They did not consider *break down* as a verb phrase. Semantically, *break down* should not be considered separately because *break* and *break down* have different meanings. (2) They might think that *down* is an adverb with little lexical meaning. In Item 3, many students at all three levels underlined the word *called* as a content word, with 13 at the elementary level, 15 at the intermediate level and 20 at the advanced level. As can be seen, the students really are very confused about what kind of verbs should be content words. Content words normally indicate nouns, most of verbs, adjectives and most of adverbs. In this case, the word *called* should be a content word. However, it is not as important as the other content words in the clause and has little lexical meaning. Therefore, it is acceptable to consider *called* as a functional word and this is the same case for the word *get* in Item 5. It can be seen in Item 4 that 12 students at the elementary level, two at the intermediate level and nine at the advanced level identified incorrectly the phrase *used to* as content words. *Used to* in the sentence functions as an auxiliary verb to refer to an action that happened in the past and thus in this case, it is a functional word. In Item 5, a total of 24 students from all three levels considered *I'm going to* as content words. *Be going to* here performs two roles (1) referring to the action of going and (2) referring to the future. If the word *going* refers to the action *go*, it is a content word. It is not a content word in a sentence if it represents a future time. Two criteria have to be met for a word to qualify as a content word: (1) it must be a noun, a verb, an adjective or an adverb and (2) it must have important lexical meaning in the sentence. Halliday and Martin (1993) define lexical density as "a measure of the density of the information in any passage of the text". So, if a verb meets only one of the criteria of a content word but has little lexical meaning, it is not a content word.

Exercise 4: Please read the following clauses and count the total number of words and the number of content words. Then calculate the lexical density of each clause.

Eggins (1994, p. 61) finds that on average a spoken text has a 33% lexical density, while the written version has a 42% lexical density and this is an important criterion to distinguish the written and spoken texts. The lexical density of a text can be measured and the formula is as follows:

T = total number of the words in a text

L = number of lexical/content words in a text

Lexical density = $L/T \times 100\%$

The students in the experimental group at all three levels were asked to use the formula to measure the given clauses and calculate the lexical density of their own texts. The purpose of the exercise is to enhance the students' awareness of the differences between written English and spoken English and to learn the characteristic of scientific writing. In Exercise 4, two items are selected and the students were required to calculate the lexical density of the two clauses which are very typical of scientific English. The right answer hinges on the correct identification of content words and the correct use of the formula. Two types of data are recorded: the number of students at each level who had a wrong calculation and their respective problems. The analyses are presented below.

1. The osmoregulatory organ, which is located at the base of third dorsal spine on the outer margin of the terminal papillae and functions by expelling excess sodium ions, activates only under hypertonic conditions.

$$18/34 \times 100\% = 52.9\%$$

2. Located on the outer margin of the terminal papillae at the base of the third dorsal spine, the osmoregulatory organ expels excess sodium ions under hypertonic conditions.

$$16/27 \times 100\% = 59.25\%$$

Table 5.2.4.2d.: Calculation of lexical density by the experimental groups at all three levels

Level	Number of students	Number of the incorrect calculation of the lexical density	The problems
Elementary	30	8 Item 1: 2; 4 Item 2: 1; 1	third ; under third; under
Intermediate	30	2. Item 1: 1 Item 2: 1	only third
Advanced	30	12 Item 1: 7 Item 2: 5	only; third; under osmoregulatory; sodium; under; third; outer; calculation problem

Discussions: Table 5.2.4.2d shows the results of the experimental group students' lexical density calculations. As can be seen from the table, the students' incorrect identifications in Item 1 include *third* and *only under*. Regarding the incorrect identification of the words *third* and *under*, the students may not really understand the part of these words in speech. The word *third* is a numeral and the word *under* is a preposition; so they are both function words. With regard to the word *only* which is an adverb, it does not

have much lexical meaning and therefore should not be treated as a content word. However, if *only* is used as an adjective, it is a content word. For instance, *She was the only person able to do it.* The word *only* in this clause is a content word. According to the table shown above, some students in the advanced level incorrectly omitted the content words *osmoregulatory* and *sodium*. These are content words as they are both nouns. Apart from the above incorrect identifications of the content words, another word *outer* should be considered a content word. *Outer* in this clause is an adjective and it is a very important word which conveys important information in the clause and without which the meaning of the message will not be clear. Therefore, it is a content word.

Exercise 5: Write two sentences which are lexically dense and the lexical density must be higher than 42%.

After being taught the theory of lexical density, it is crucial to test the students' ability to apply what they have learnt. It is a failure if students learn something and not use it. In Exercise 5, the researcher examines the students awareness of lexical density and their application of lexical density in writing highly lexically dense clauses. The calculations were done by the students themselves. The number of students who wrote clauses of a lexical density of higher or lower than 42% is captured and the ratio is calculated. The statistical results are illustrated below.

- ***Sample data analysis***

1. The comparison of the difference between Chinese and English makes learners feel easy to learn English well.
2. Lexical density = $11/17 \times 100\% = 64.7\%$

3. The use of electronic dictionary makes it convenient for learners of English to find the meanings of new words.

$$\text{Lexical density} = 11/19 \times 100 = 57.9\%$$

Table 5.2.4.2e.: *Statistical results of a student's sample exercise at advanced level*

Level	Student	Lexical density higher than 42% Sentence (1)	Sentence (2)	Mean
Advanced	1	64.7%	57.9%	61.3%
Total				
Mean				

Table 5.2.4.2f.: *Statistical results of the students' lexical density exercises at all three levels*

Level	Number of students	C1	C2	C3	C4	C5
Elementary	30	50.8%	49.3%	3	10%	50.1%
Intermediate	30	52.7%	50.6%	3	10%	51.2%
Advanced	30	52.7%	51.4%	3	10%	52.1%

C1 = Lexical density higher than 42% for Sentence (1)

C2 = Lexical density higher than 42% for Sentence (2)

C3 = Number of students having a lexical density lower than 42%

C4 = Ratio of the students with lower lexical density to the total number of students

C5 = Mean lexical density of all students

Discussions: Table 5.2.4.2f illustrates the statistical results of the experimental group students' lexical density exercises at all three levels. As can be seen from the table, on average the students at all three levels could write sentences of a lexical density higher than 42% which is the important criterion to distinguish written English. The average lexical densities of sentence one are 50.1%,

51.2% and 52.1% for the elementary, intermediate and advanced levels respectively, whilst the respective average lexical densities of sentence two are 49.3%, 50.6% and 51.4%. The elementary level students achieved a lexical density of 50.8% and 49.3% in sentence one and two respectively. Ten percent of the students at the elementary level wrote sentences with lexical density lower than 42%. With regard to students at the intermediate level, their sentence one and sentence two have a lexical density of 52.7% and 50.6% respectively. Ten percent of the students at the intermediate level failed to write sentences of a lexical density higher than 42%.

Comparatively, the advanced level students performed best with lexical densities in both sentences higher than those of the intermediate and elementary level students (52.7% (advanced) vs. 52.7% (intermediate) vs. 50.8% (elementary) for sentence one and 51.4% (advanced) vs. 50.6% (intermediate) vs. 49.3% (elementary) for sentence two).

5.2.4.3. Data analysis of nominalisation in students' exercises

Nominalisations are the characteristics of academic writing, adult writing and scientific writing. Nominalisations are normally the noun forms of verbs. The process of nominalisation turns verbs (actions or events) into nouns (things, concepts or people) and as a result the text describes objects or concepts rather than actions. Developing students' awareness of nominalisation and the use of noun forms of the verbs in their writing is important to help students write in a more academic style and it is also important to help students understand scientific writing. In this section, the students' exercises requested the students to nominalise sentences based on nominalisation structural adjustments with an aim to develop the students' skills in producing nominalisation structures, identifying and nominalising active verbs in sentences, and distinguishing written and spoken English. Data analyses of the experimental group students'

exercises at all three levels are conducted to examine both the students' general knowledge and their application of nominalisation.

Exercise 1: Please nominalise the following sentences.

In Exercise 1, data analysis is undertaken according to Givón's (Givón, 1993, pp. 288-299) structural adjustments which produce nominalisation structures. There are six items in this exercise, the number of incorrect nominalisations in each item and the problems are demonstrated in the table below to illustrate the students' problems in the structures of nominalisation. The expected answer is given after each clause.

1. He objected to the proposal. (his objection to the proposal)
2. She departed from the university. (her departure from the university)
3. It crawls like a worm. (Its worm-like crawl)
4. She made him wash the floor. (her making him wash the floor)
5. He wanted to leave home. (his wanting to leave home)
6. She wished that he would come back. (her wish that he would come back/ her wish for his coming back)

Table 5.2.4.3a.: *Nominalisation structures produced by the experimental groups at all three levels*

Level	Number of students	Number of the incorrect nominalisation structures	The problems
Elementary	30	Item 1: 2	1. his objecting to the proposal
		Item 2: 5	2. His departing His department
		Item 3: 12	3. Its worm-like crawling Its crawling like a worm The crawling of it like a worm Its worm-like crawling Its crawlment like a worm of it It likes a worm's crawl. Its crawl like a worm. A crawling like a worm
		Item 4: 10	4. Hers making him wash the floor His washing the floor made by her. Her make him wash the floor The floor's washing of his made by him His being made washing the floor His washing the floor The want of leaving home Her make him of washing the floor His washing the floor made by her
		Item 5: 6	5. his wanting of leaving home
		Item 6: 7	6. her wish of his coming back her wish to come back She wished his coming back. Her wishing for him to come back
Intermediate	30	Item 1: 4	1. his objection of the proposal The proposal he objected

		Item 2: 5	2. her departing from the university Her department from the university Her department of the university Her university departure from the university
		Item 3: 7	3. It's wormy crawl Its wormy crawling Its worm like crawls Its crawling like a worm Its crawls like a worm A worm of its crawls liking
		Item 4: 3	4. her making him washing the floor
		Item 5: 9	5. His wants to leave home His want of leaving home His want to leave
		Item 6: 11	6. her wish of his coming back Her wishing of his coming back Her wishes is that he would come back
Advanced	30	Item 2: 3	2. her department
		Item 3: 10	3. Its crawling like a worm The crawl of it like a worm Its worm-like crawling Its crawlment like a worm of it It likes a worm's crawl. Its crawl like a worm. A crawling like a worm
		Item 4: 9	4. His washing the floor made by her. Her make him wash the floor The floor washing she made him His being made washing the floor His washing the floor The want of leaving home Her make him of washing the floor

			His washing the floor made by her
		Item 5: 3	5. his want of leaving home His wanting to leaving home
		Item 6: 6	6. her wish of his coming back her wish to come back She wished his coming back. Her wishing for him to come back

Discussions: Table 5.2.4.3a illustrates the statistical results of the students' production of nominalisation structures. As can be seen from the table, there are six items in Exercise 1. Students at all levels had problems in producing the correct nominalised structures in every item. It can be very challenging for the students to know the nominal suffixes in English. According to the errors the students made, these challenges concern nominal morphology, case marking of subject and object, prepositions, subject or object, etc. The researcher groups the problems in the categories below.

1. Nominal morphology

According to the table shown above, the students at all levels' had problems in getting the right nominal morphology and the typical problems are listed as follows:

1. his objecting to the proposal
2. his departing
3. His department
4. Its worm-like crawling
5. Its crawlment like a worm of it
6. his want of leaving home

7. her wishing for him to come back

The above seven typical problems which are related to nominal morphology are summarised as:

1. The students do not know that some of the verbs have nominal suffixes. For example, object – objection, depart – departure.
2. The students do not know that some of the verbs do not change in their nominalised forms. For example, crawl – crawl, wish – wish.
3. All English verbs can be nominalised as –ing infinitives. For example, make – making, want – wanting.

2. Case marking of subject and object

Regarding the following incorrect nominalised structures, the students typically have not changed the subjects into their possessive forms.

It crawls like a worm. → *Its worm-like crawl*

She made him wash the floor. → *Her making him wash the floor*

Typical problems:

1. The crawling of it like a worm
2. It likes a worm's crawl.
3. She wished his coming back.

A crucial issue concerning nominalisation is the subject-object case marking. However, these students ignored the nominalisation structure adjustments of the subject and that the object may become possessive determiners.

3. Preposition which follows the verb

According to Item 1 *He objected to the proposal*, when the sentence changes into a nominalised structure, the preposition followed by the verb should be kept.

He objected to the proposal. → *his objection to the proposal*

She departed from the university. → *her departure from the university*

Typical problems:

1. his objection of the proposal
2. her departure of the university

4. Subject or object

When nominalising a sentence, the subject and the object can be changed into possessive form. However the sentence should be correct and understandable.

She made him wash the floor. → *her making him wash the floor*

Typical problems:

1. his washing floor made by her
2. his being made washing the floor

Another way of nominalising the clause is *his being made to wash the floor*.

Exercise 2: Please identify the active verbs in the following clauses and then try to nominalise the main verbs of the clauses.

In Exercise 2, the students were asked to identify the active verbs in the following clauses and then rewrite the sentences by nominalising the active verbs. The researcher first examines the identification of the active verbs and then the application of the nominalised forms in the clauses. Data analyses in this section focus on the identification of active verbs and the application. The

number of students who incorrectly identify the active verbs or could not nominalise the verbs properly in the clauses are recorded. The results are illustrated by table below.

1. Crime was increasing rapidly and the police were becoming concerned.
(The rapid *increase* in crime was causing *concern* among the police.)
2. Every day shops lose thousands of dollars worth of valuable items. And this affects us all because prices increase and we have to pay extra.
(The daily *loss* of thousands of dollars worth of valuable stock ultimately affects us all through *an increase* in prices.)
3. The building was constructed using principles of environmental sustainability.
(The *construction* of the building used principles of environmental sustainability.)

Table 5.2.4.3b.: *Active verbs identification and nominalisation application in the clauses*

Level	Total number of students	Incorrect identification of active verbs	Numbers	Incorrect nominalisation in the clauses	Number
Elementary	30	Item 1: becoming concern	3	1. sentence structure	5
		Item 2: lose	4	2. losing sentence structure	2 11
		Item 3:	2	3. constructing constructure sentence structure	2 2 8
Intermediate	30	Item 1: concern becoming	5 1		1
		Item 2: lose	2	2. Loss sentence structure	2 8
		Item 3: construction	2	3. sentence structure	6
Advanced	30	Item 1: concern	2	1. increasing sentence structure	2 4
		Item 2: lost	2	2. sentence structure losing	5 1
		Item 3:		3. sentence structure constructure	3 1

Discussions: Table 5.2.4.3b shows the active verbs identification and the nominalised application in the clauses. The most important thing to turn spoken

English into written English is to nominalise the active verbs in the sentences by using nominalisation structure adjustments. However, like the last exercise, this exercise is equally challenging to the students in terms of having to deal with nominal suffixes, subject-object case making, use of determiners and adverb-adjective conversion. According to the table shown, the students not only had problem in identifying active verbs but also committed the same problems discussed in the last exercise. In Item 1, 15 students from all three levels identify incorrectly the words *become* and *concern* as the active verbs and not *increase* and *concern*. In Item 2, six students from the three levels had nominal morphological problems (e.g. *concern* – *concern*, *lose* – *loss*, *construct* – *construction*) and they also had sentence structure problems. These reveal that the students are not able to use nominalised structure adjustments properly and they also have problems in sentence structures. As such, the students have problems in their application of nominalisation. In future, it may be necessary for the teachers to first familiarise the students with nominal suffixes before teaching nominalisation and nominalised structures.

5.2.4.4. Data analysis of grammatical metaphor in students' exercises

Halliday (1994a) uses the term grammatical metaphor to refer to the meaning transference from congruent to metaphorical in grammar. Congruent forms reflect the typical ways that we construe experience. In congruent forms, verbs represent actions or processes, nouns represent participants and adjectives represent attributes. However, with the development of language, people often find that the original relations have changed. They often turn verbs into nouns, adjectives into nouns and sentences into noun phrases and these changes are called grammatical metaphors. Grammatical metaphor, which is greatly valued in scientific and academic registers, is used to condense information by expressing concepts in an incongruent form as a way of expressing “objectification” and “abstraction”. In this section, data analyses are conducted

on the basis of the definition of congruent and metaphorical forms and statistics is undertaken to examine how well the students understand the grammatical features and application.

Exercise 1: Please tell if the following clauses are congruent or metaphorical.

In Exercise 1, the students' identification of the congruent or metaphorical forms is examined. There are 6 items in this exercise. Each item is analysed separately and the ratio of students who provided the correct answers is calculated at each level. The statistical analysis is illustrated by the table below.

1. Mary saw a wonderful sight. (Congruent)
2. A wonderful sight met Mary's eyes. (Metaphorical)
3. I think he is right. (Interpersonal grammatical metaphor)
4. Probably he is right. (Congruent)
5. Could you please tell me your name? (Interpersonal grammatical metaphor)
6. Please tell me your name. (Congruent)

Table 5.2.4.4a.: *The statistical analysis results of the congruent and metaphorical forms exercise*

Item	Level					
	Elementary		Intermediate		Advanced	
	Number of students/Ratio					
	30		30		30	
Item 1 (Congruent form)	25	83%	28	93%	28	93%
Item 2 (Metaphorical form)	30	100%	30	100%	30	100%
Item 3 (grammatical metaphor)	21	70%	25	83%	26	86.7%
Item 4 (Congruent form)	27	90%	28	93%	27	90%
Item 5 (grammatical metaphor)	26	86.7%	29	96.7%	29	96.7%
Item 6 (Congruent form)	30	100%	30	100%	30	100%

Discussions: Table 5.2.4.4a illustrates the statistical analysis results of the students' understanding of congruent and metaphorical forms. Identifying congruent or metaphorical forms is the basis of grammatical metaphor application. As can be seen from the table above, 83% of the elementary level students, 93% of the intermediate and advanced level students correctly identified the congruent form in Item 1. It is great to see that 100% of the students of all three levels correctly identified the metaphorical form in Item 2 which is very typical metaphorical sentence. *A wonderful sight* is the Actor, *met* is the material Process and the *eyes* is the Goal. Items 3 and 5 are interpersonal grammatical metaphors. However, Item 3 is an interpersonal metaphor of modality and Item 5 is interpersonal metaphor of mood. The students' understanding of Item 3 (70% (elementary), 83% (intermediate) and 86% (advanced)) is not as good as Item 5 (86.7% (elementary), 96.7% (intermediate) and 96.7% (advanced)). Items 4 and 6 are both congruent forms. The students at all levels did an excellent job in Item 6 (100%). Compared with Item 6, the students performed slightly worse in Item 4 (86.7% (elementary), 96.7% (intermediate) and 96.7% (advanced)). Though grammatical metaphors are more common in spoken English, it is necessary to cover this in English teaching because knowing the characteristics of spoken English helps the understanding of the characteristics of written English.

Exercise 2: Translate the following clauses into English by using nominalisation or grammatical metaphor.

To develop the students' writing skills by raising their awareness of the use of grammatical features they have learnt is more important than merely teaching the knowledge without requiring the students to use it. This nominalisation and grammatical metaphor exercise focuses on the specific identification of the grammatical features and structure application. In this exercise, the researcher focuses mainly on the general application of these features. In Exercise 2, the students were required to translate three Chinese sentences into English by

using nominalisation and grammatical metaphor where necessary. Here the assessment focuses mainly on the use of nominalisation or grammatical metaphor in translating the clauses, and at the same time the clauses must be understandable. Data analysis results are illustrated by the table below.

1. 乘公共汽车或开私车的不断普及可能导致了骑自行车和步行的下降。
(*The increasing popularity of taking a bus or car, likely caused the decrease in cycling and walking.*)
2. 数据表明, 尽管越来越多的妇女加入到了有酬劳动的行列, 然而这却并未导致男人致力于更多的家务劳动。
(*The data suggest that the increased presence of women in the paid work force has not yet led to an increased role for men at home.*)
3. 中华人民共和国是 1949 年成立的。
(*Nineteen forty-nine saw the founding of the People's Republic of China.*)

Table 5.2.4.4b.: Sentence translation using nominalisation and grammatical metaphor

Student level/number	Item 1		Item 2		Item3	
	Number of nominalisations and grammatical metaphors used in an item /Ratio					
Elementary 30	...popularity of decrease	11 36.7%	Presence of women	15 50%	saw the founding of	16 53.3%
Intermediate 30	...popularity of decrease	5 16.7%	Presence of women	8 26.7%	saw the founding of	9 30%
Advanced 30	...popularity of decrease	14 46.7%	Presence of women	21 70%	saw the founding of	25 83.3%

Discussions: Table 5.2.4.4b illustrates the results of the students' sentence translation using nominalisation and grammatical metaphor. As can be seen from the table, in Item 1, the percentages of the students at the three levels who used the nominalised forms of *popularity of* and *decrease* are 36.7% (elementary), 16.7% (intermediate) and 46.7% (advanced). The advanced level students are better than the elementary level (36.7%) and intermediate level (16.7%) students. In Item 2, 50% of the elementary level students, 26.7% of the intermediate level students and 70% of the advanced level students could use the nominalised form of *presence of women*. Compared with the other two groups, the intermediate level students (26.7%) were more challenged than the advanced (70%) and elementary level (50%) students. In Item 3, 53.3% of the elementary level students, 30% of the intermediate level students and 83.3% of the advanced level students used *saw the founding of* in their sentence translation. However, compared with the other two levels, the intermediate level students (30%) were again behind the advanced (83.3%) and elementary (53.3%) students. According to the statistical analysis results, there is still room for improvement with regard to the application of grammatical metaphor and nominalisation in sentence translation and sentence translation can be used to develop the students' comprehensive ability in the application of nominalisation and grammar metaphor.

5.3. Summary

It can be summarised that teaching SFL grammatical features to develop the writing skills of Chinese students learning English is both effective and necessary. The comparisons between the pre-teaching and post-teaching writing exercises of the experimental and control groups show that the students in the experimental groups have better awareness of the use of SFL grammatical features in their writing. They can use a wider range of thematic progression patterns to write coherently, rather than be limited to parallel

patterns. They can also write lexically denser clauses, distinguish spoken and written English and know how to pack in more meaning and information in clauses. They have tried to express themselves in various ways after learning nominalisation and grammatical metaphor. However, problems and difficulties can be seen from the students' exercise of SFL grammatical features. These reveal that there is much more English teachers should do to develop the English writing skills of Chinese students. Studies of the objective aspects are not enough to give a full picture of SFL teaching in developing the English writing skills of Chinese students. Therefore, in the next chapter, the research will move to the subjective aspects of obtaining the students' views on SFL learning and the teachers' views on teaching English writing to Chinese students and the students' involvement in classroom activities.

CHAPTER 6. DATA ANALYSIS AND RESULT 2:

NON-TASK-BASED DATA

6.1. Introduction

In Chapter 5, the task-based data of the students' pre- and post-teaching writing exercises were analysed. The data is more focused on the students' application of SFL grammatical features and the assessment of their learning results. In this chapter, the data analysis is centred on the non-task-based data including questionnaires, informal interviews and classroom observation. In addition to task-based data analysis, it is also important to have a non-task-based data analysis so as to test the reliability and validity of the research to assess the quality of data, as the combined methods and using a number of data sources are the basis of triangulation. Sieber (1973) offers a detailed list of reasons to combine qualitative and quantitative data collection methods and data analysis. During analysis, quantitative data can help by showing the generality of specific observations, correcting the "holistic fallacy", and verifying or casting new light on qualitative findings. On the other hand, qualitative data analysis can help by validating, interpreting, clarifying, and illustrating quantitative findings, as well as strengthening and revising the theories. As a result, quantitative and qualitative data analysis methods are used again in this chapter to achieve the objectives of the study. In this chapter, a combination of quantitative, qualitative and interpretative approaches is employed. Statistical quantitative data analysis was firstly conducted by using EXCEL and SPSS to examine the questionnaire data to establish the significance of the study. The researcher then analysed the informal interview data by identifying different themes from the teachers and the students' perspectives and their subjective views. Finally the researcher examined the classroom observation notes and

interpreted and reflected on what actually happened in the classes in a very objective manner.

6.2. Questionnaire data analysis and results

The importance of collecting data from a variety of sources to fully understand the effect of the teaching and learning outcomes should be noted. For this purpose, a survey in the form of a questionnaire about the students' general understanding of SFL and their views and attitudes towards the effectiveness of the grammatical features in improving their English writing skills was conducted. The survey involved 90 students from the experimental groups at the three levels and it was conducted in the participants' classrooms after the last lesson of the SFL teaching with agreements from both the dean and the participants. It lasted 30 minutes and the questionnaires were collected and kept in the sealed envelopes for future data analysis. The quantitative data were analysed using SPSS (SPSS12.0.1 for windows). The statistical analysis is presented as descriptive statistics which includes mean and percentage. The survey respondents are the 90 students in the experimental groups at the three levels as they have been involved in the real learning situation and have experienced the whole SFL learning process. Thus they are the right persons to collect the facts from. In order to obtain information in a comparatively more complete way, the questionnaire is divided into three parts with a total of 22 items to achieve the Research Objective1-(1):

- ***Three parts of the questionnaire***

Part 1: Students' general information

Part 2: General understanding of SFL (Items 1-16)

Part 3: Students' attitude towards SFL and the application of its four grammatical features (Items 1-6)

Likert scales are used in Part 2 and Part 3 of the questionnaire. In Part 2, the responses are coded in the scale as True (T-3), Not Sure (NS-2) and False (F-1), indicating the degree of the students' understanding of SFL and its grammatical features. In Part 3, the responses are coded as Strongly Agree (SA-5), Agree (A- 4), Not Sure (NS-3), Disagree (D-2) and Strongly Disagree (SD-1) referring to the students' views on the application of the four grammatical features. The respondents can choose the one answer that they think most closely reflects their ideas.

6.2.1. Questionnaire Part 2: General understanding of the SFL theory

In Part 2 of the questionnaire, the students' general understanding of SFL is investigated. The interpretation of the Likert scale, the statistical data analysis and the results are discussed below.

- ***Likert scale interpretation of Part 2 of questionnaire***

True (T-3): Good understanding of SFL

Not sure (NS-2): Do not completely understand SFL

False (F-1): Little understanding of SFL

The figures below (Figure 6.2.1a, b, c, d, e and f) are the statistical results of the statistical data analysis of Part 2 in the questionnaires completely by all 90 students in the experimental group at the elementary, intermediate and advanced levels covering their general understanding of SFL (Items 1-16). Figures 6.2.1a, b, c, d and e show the understanding and awareness of SFL of the students at the various levels. Whilst, Figure 6.2.1f shows the general understanding and awareness of SFL of all levels as a whole. This way, the students' general understanding of SFL at specific levels or as a whole can be

identified. According to the Likert scale set for Part 2 of the questionnaire, the mean score for having a reasonable understanding of SFL should be about three or more than 2.5. (2.5 is set as the base because it is between “good understanding of SFL” and “Do not completely understand SFL”.) If the score is less than 2.5, that means the student has poor or little understanding of the SFL.

Figures 6.2.1a, b, c, d and e below show the mean score of the students’ general understanding of SFL at the three different levels. Part 2 of the questionnaire is divided into five parts (as below) according to the grammatical features and the analysis of each part is illustrated by the bar charts below. All the 16 items are showed in Appendix.

Part 1: General understanding of SFL (Items 1-4)

Part 2: SFL grammatical feature - Theme and Rheme (Item 5)

Part 3: SFL grammatical feature - lexical density (Items 6-8)

Part 4: SFL grammatical feature - nominalisation (Items 9-10)

Part 5: SFL grammatical feature - grammatical metaphor (Items 11-16)

- **Part 1: General understanding of SFL (Items 1-4)**

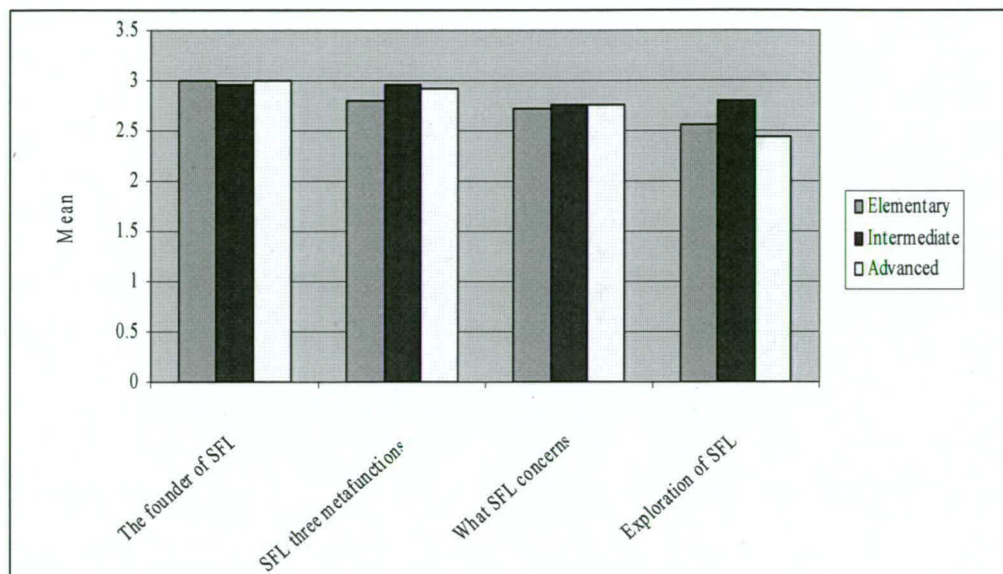


Figure 6.2.1a (Part 1).: *The students' general understanding of SFL at all three levels (Items 1-4)*

Figure 6.2.1a (Part 1) shows that the students at each of the three levels had a very good understanding of SFL (mean >2.5) except for the response to Item 4 from the students at the advanced level (mean 2.43). In Item 4, the elementary level students' response (mean 2.57) was not as high as the response of the intermediate level students (mean 2.80). This reveals that the advanced level students have problems in understanding how functional grammar explores ways in which English grammar enables the speakers and writers to represent their experience of the world, to interact with one another and to create coherence messages.

- **Part 2: SFL grammatical feature - Theme and Rheme (Item 5)**

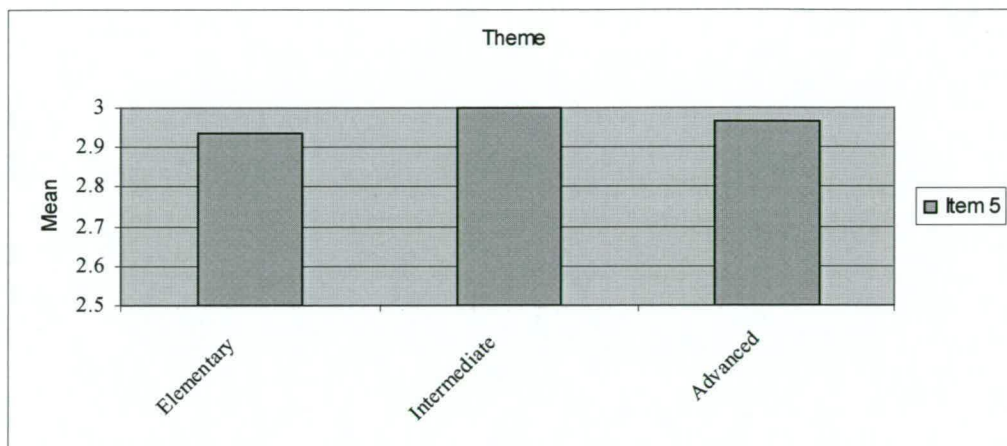


Figure 6.2.1b (Part 2).: The students' understanding of Theme and Rheme at all three levels (Item 5)

Figure 6.2.1b (Part 2) shows the understanding of the students at all three levels of the SFL grammatical feature Theme and Rheme. The mean scores of each level are 2.93 (elementary), 3.00 (intermediate) and 2.97 (advanced). The results show that the students at all three level had a good understanding of the Theme theory. Even though the score of the elementary level students is lower than that of the other two levels, it is still much higher than the base line of 2.5. The intermediate level students did a superb job and their average score is 3.00.

- **Part 3: SFL grammatical feature - lexical density (Items 6-8)**

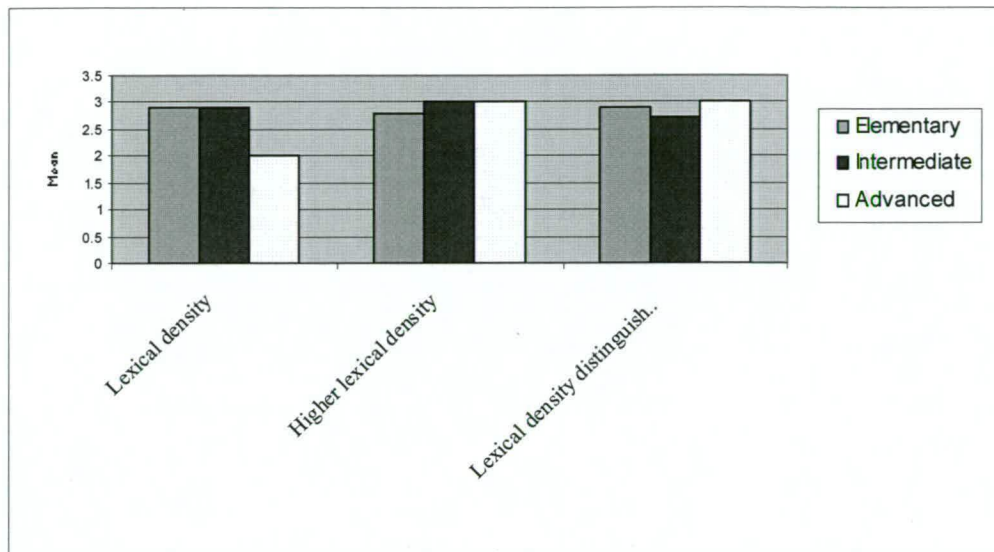


Figure 6.2.1c (Part 3): The students' understanding of lexical density at all three levels (Items 6-8)

Figure 6.2.1c (Part 3) shows the results of the responses of the students at all three levels to Items 6, 7 and 8 of the SFL grammatical feature lexical density. The students at all three levels had a good understanding of lexical density. The mean scores for Item 6 are 2.87 (elementary), 2.90 (intermediate) and 2.93 (advanced). The mean scores for Item 7 are 2.80 (elementary), 3.00 (intermediate) and 3.00 (advanced). Whilst the mean scores for Item 8 are 2.80 (elementary), 2.70 (intermediate) and 2.97 (advanced). The scores are all above the base line of 2.5, though the average score of the elementary level is lower than that of the other two levels (mean 2.80 (elementary), 3.00 (intermediate), 3.00 (advanced)) in Item 7. In Item 8, the score of the intermediate level is lower than that of the other two levels (mean 2.80 (elementary), 2.70 (intermediate), 2.97 (advanced)). In Item 7, the average scores of the intermediate and advanced levels top at 3.00.

- **Part 4: SFL grammatical feature - nominalisation (Items 9-10)**

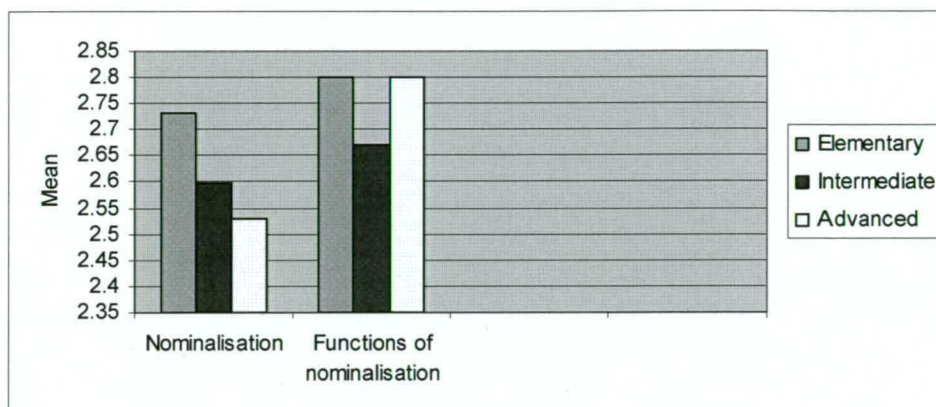


Figure 6.2.1d (Part 4).: The students' understanding of nominalisation at all three levels (Items 9-10)

Figure 6.2.1d (Part 4) indicates the results of the responses of the students at all three levels to the questions on understanding of the SFL grammatical feature nominalisation. There are two items (Items 9 and 10) in this part. In Item 9, the scores of the three levels are 2.73 (elementary), 2.60 (intermediate) and 2.53 (advanced). As the figure shows, the scores of the intermediate and advanced level students in this item are 2.60 and 2.53 respectively, which are just above the base line of 2.5 and these indicate that they have only very basic understanding of the definition of nominalisation. In Item 10, the scores of each of the three levels are 2.80 (elementary), 2.67 (intermediate) and 2.80 (advanced). Compared with the scores of the elementary and advanced levels (both have a mean score of 2.80), the score of the intermediate level students (mean 2.67) is lower. However, it is still above the basic line of 2.5. These indicate that the students at all three levels all have a general understanding of the functions of nominalisation in written and academic writing.

- **Part 5: SFL grammatical feature - nominalisation (Items 11-16)**

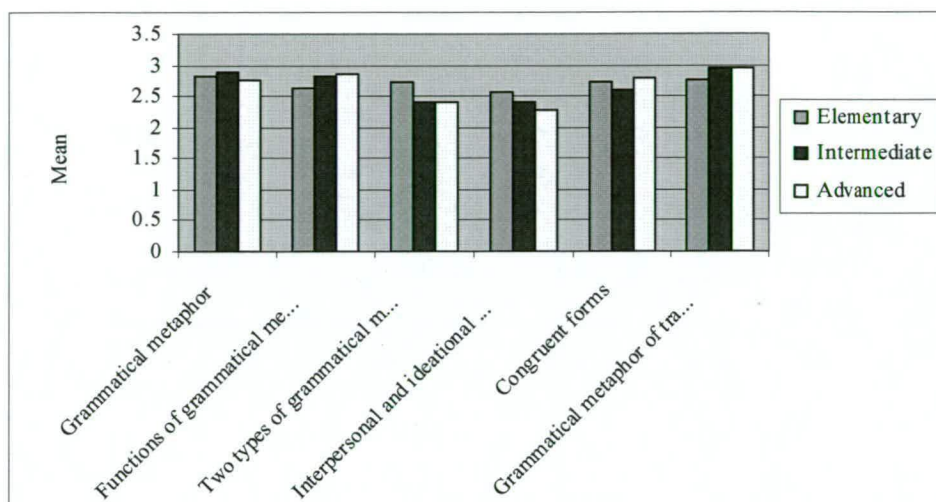


Figure 6.2.1e (Part 5).: The students' understanding of grammatical metaphor at all three levels (Items 11-16)

Figure 6.2.1e (Part 5) shows the results of the students' understanding towards grammatical metaphor. There are six items (Items 11-16) in this part. Figure 6.2.1e indicates that the scores of the students at the three levels in Items 11, 12, 15 and 16 are all above 2.5. These indications show that the students at all levels have very good understanding of the definition of grammatical metaphor, the congruent form and grammatical metaphor of transitivity, even though the elementary level scored 2.63 in Item 12 and the intermediate level scored 2.60 in Item 5. However, the intermediate and advanced level students have the top average score at 2.97 in Item 16 and the intermediate level students came second with an average score of 2.90 in Item 15. According to Figure 6.2.1e, the responses to Item 13 (mean 2.73 (elementary), 2.40 (intermediate), 2.40 (advanced)) and Item 14 (mean 2.56 (elementary), 2.40 (intermediate) and 2.27 (advanced)) are not positive. Both the intermediate and advanced level students have problems in understanding metaphors of mood and metaphors of

transitivity (mean 2.40) and the interpersonal and ideational metaphors in terms of the model of semantic functions (mean 2.40 and 2.27).

- All 90 experimental group students' understanding of SFL and its grammatical features (Items 1-16)

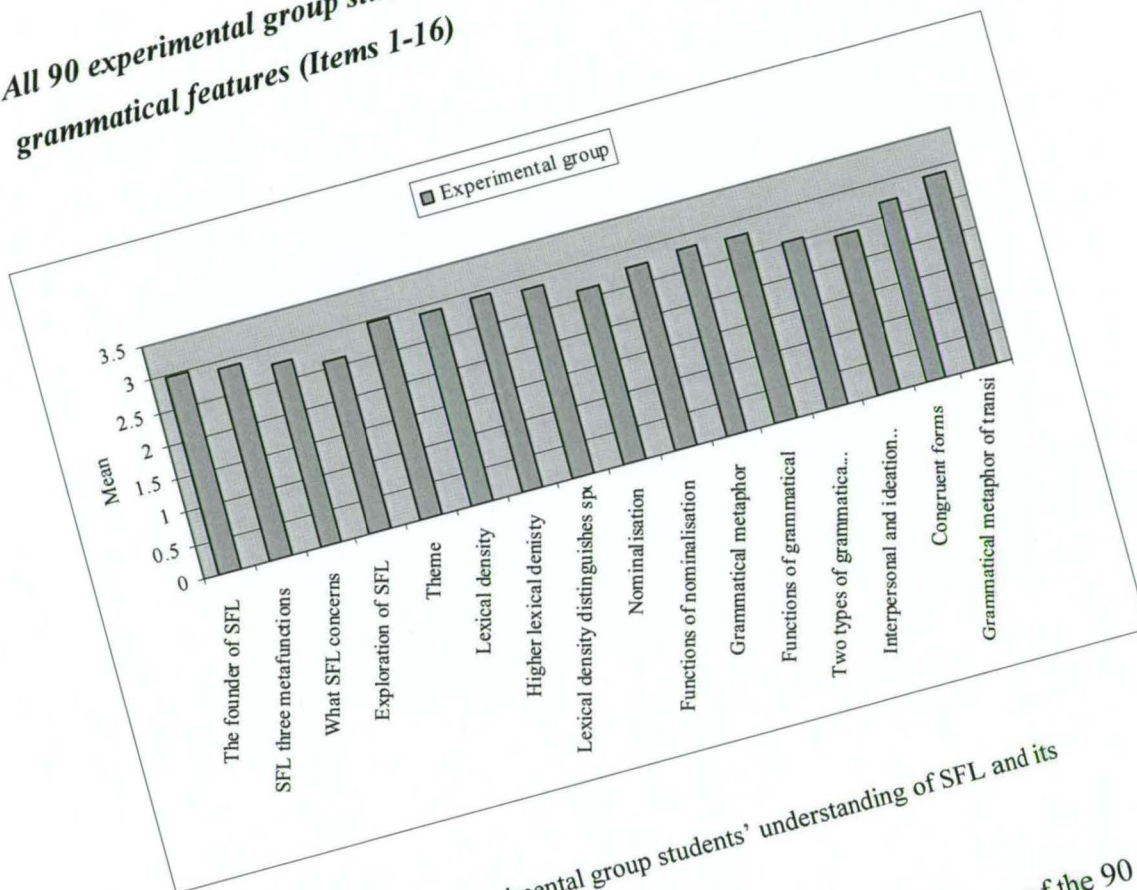


Figure 6.2.1f: All 90 experimental group students' understanding of SFL and its grammatical features (Items 1-16)

Figure 6.2.1f above illustrates the mean scores of the responses of the 90 students in the experimental group to Items 1-16. Figure 6.2.1f shows that the mean scores of Items 1, 2, 5, 6, 7, 8 and 16 (2.99, 2.90, 2.97, 2.90, 2.93 and 2.90 respectively) are quite close to the full score of three. These indicate that the students in the experimental group who have had SFL lessons have very good awareness and general understanding of the SFL concepts developed by Halliday, especially the three metafunctions of SFL, the concerns of SFL, Theme, lexical density, the functions of lexical density and grammatical

metaphor of transitivity. However, Figure 6.2.1f also shows that the mean scores of Items 13 and 14 (2.51 and 2.41 respectively) are equal to or below 2.5. These reveal that the students have problems in understanding metaphors of mood and transitivity, and interpersonal and ideational metaphors.

6.2.2. Questionnaire Part 3: Students' attitude towards SFL and the application of its four grammatical features

In Part 3 of the questionnaire, the students' attitudes towards SFL and the application of its four grammatical features are investigated. The Likert scale interpretation, statistical data analysis and results are illustrated below.

- ***Likert scale interpretation of Questionnaire Part 3***

Part 3 of the questionnaire concerns the investigation of the students' attitudes towards SFL and the application of its four grammatical features. The investigations include the students' attitudes towards Theme concept and its application, the application of lexical density, nominalisation and grammatical metaphor. The results of the students' responses are coded according to the Likert scale of Strongly Agree = 5, Agree = 4, Not Sure = 3, Disagree = 2, and Strongly Disagree.

The degree of frequency is used to identify the mean score, frequency and percentage to show the tendency of the students who have a positive or negative attitude towards SFL and its application. The Likert scale interpretation is as follows:

Strongly Agree (SA)-5: Very positive attitude towards learning SFL and can excellently apply the grammatical features

Agree (A)-4:	Positive attitude towards learning SFL and can apply the grammatical features well
Not Sure (NS)-3:	Not active in learning SFL and in using its grammatical features
Disagree (D)-2:	Negative attitude towards SFL and is poor in applying the grammatical features
Strongly Disagree (SD)-1:	Very negative attitude towards SFL and is very poor in applying the grammatical features

Figure 6.2.2 below presents the statistical data analysis results of Part 3 of the questionnaire with regard to the students’ attitudes towards the SFL and the application of its four grammatical features at the elementary, intermediate and advanced levels (Items 1-6). According to the Likert scale set for Part 3, the score indicating a positive attitude towards SFL and the application of its four grammatical features should be about four or more than 3.5. If the score is less than 2.5, this means the student has a negative attitude towards SFL or performs poorly in applying its four grammatical features. The data analysis and the results are illustrated by the bar chart below.

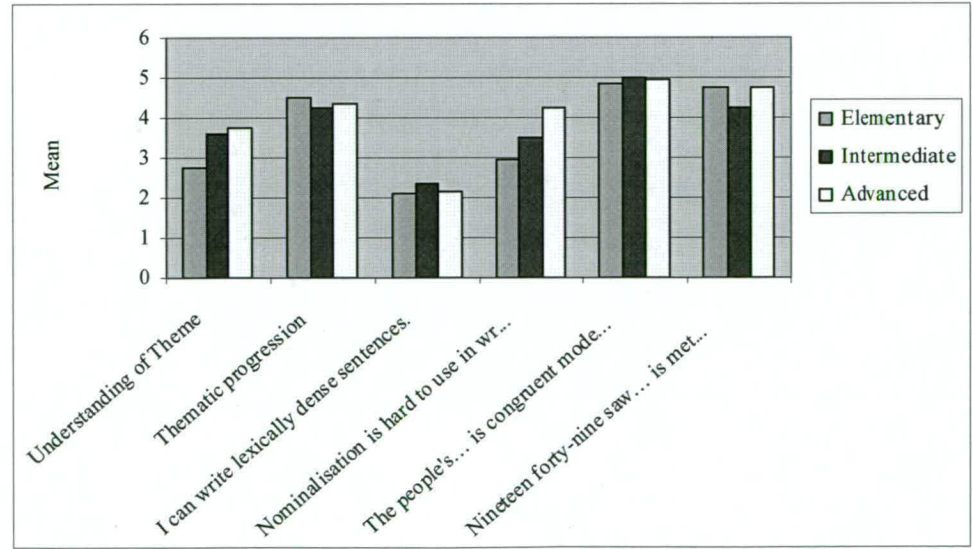


Figure 6.2.2.: Questionnaire Part 3: Students attitude towards SFL and the application of its four grammatical features (Items 1-6)

Figure 6.2.2 above shows that the students at the three levels have different attitudes towards SFL and different proficiencies in application. The attitudes of the students at the intermediate and advanced levels towards the understanding of Theme (Item1) are positive in (mean 3.60 and 3.77 respectively). However, compared with the intermediate and advanced level students, the elementary level students' attitude tends to be not very positive (mean 2.73). Regarding the students' attitudes towards the function of thematic progression in writing (Item 2), the students at all three levels are all with very positive or positive (mean 4.50 (elementary), 4.23 (intermediate) and 4.36 (advanced)). Different from the attitudes towards Item 2, the students at all levels all hold a negative attitude (mean 2.10 (elementary), 2.37 (intermediate) and 2.13 (advanced)) towards writing lexically dense clauses in their exercises (Item 3). The application of nominalisation (Item 4) is an exception considering the way of the statement is framed: "nominalisation is hard to use in writing", which means that the higher the mean score, the more negative the students' attitude is. If the score is about four or more than 3.5, this means the student has a negative attitude. On the contrary, if the score is more than 2.5, this means the student has a positive attitude. In Figure 6.2.2, the scores of the students at the three levels towards nominalisation application (mean 2.93 (elementary), 3.50 (intermediate) and 4.27 (advanced)) indicate they have a negative attitude to the application of nominalisation in their writing, though the attitude of the elementary level (mean 2.90) is not as negative as those of the advanced (mean 4.27) and intermediate (mean 3.50) levels. Figure 6.2.2 also shows that the students at all levels have a very positive attitude towards the application of grammatical metaphor (Items 5 and 6), especially for the intermediate and advanced level students in Item 5 (mean 5.00 and 4.97 respectively). The elementary level students also hold a positive attitude (mean

4.87), though the degree is not as strong as the students of the other two levels. In Item 6, the intermediate level students' attitude (mean 4.23) is not as strong as the elementary and advanced level students' (mean 4.76 and 4.73 respectively), though they all hold a very positive attitude towards the metaphorical mode.

From the investigation of the responses to Part 2 and Part 3 of the questionnaire above, it can be concluded that the students' responses to each item have a lot in common, though there are some exceptions. In Part 2 of the questionnaire, the students at all levels have very good understanding of the three metafunctions of SFL, the concerns of SFL, Theme, lexical density, functions of lexical density and grammatical metaphor of transitivity (Items 1, 2, 5, 6, 7, 8 and 16). However, the students have poor understanding of metaphors of mood and transitivity, and interpersonal and ideational metaphors (Items 13 and 14). The students can understand basic concepts of what SFL is, what SFL explores, what nominalisation is, the function of nominalisation, the concepts of grammatical metaphor and what 'congruent' form is (Items 3, 4, 9, 10, 11, 12 and 15). In Part 3 of the questionnaire, the students have a very positive attitude towards the understanding of Theme, the function of thematic progression in writing and the application of grammatical metaphor (Items 1, 2, 5 and 6). However, their attitudes towards writing lexically dense clauses and the application of nominalisation in writing are not positive (Items 3 and 4).

6.3. Data analysis of informal interviews and results

As one of the most important non-task-based data, the informal interview data analyses and results are presented in this section. These include data transcripts of the informal interviews with three teachers and six students. The detailed reflections of the teachers on their experience in teaching English writing, language expressions in writing, spoken and written English, the typical

mistakes in English writing by Chinese students, academic writing, Chinese thought patterns and language base are reported. The students' informal data focus on their reflections on their general understanding of SFL, difficulties and problems, interests in learning SFL and its effectiveness in improving their English writing. The data are grouped into themes according to the responses to the open-ended interview questions. Qualitative analysis methods of interpretation and discussion are employed to gauge the views of the interviewees from different angles. The results of the data analysis are related to the Research Objective 4 and 6.

6.3.1. The interview process

To explore informants' experiences and interpretations is important for researchers and interviews are useful in getting such information. In this section, informal interviews were employed as mentioned in Chapter 4. As Michael Agar (1980) suggests, information from interviews can serve as the "methodological core" against which observational data can be used to "feed" ongoing informal interviews. Researchers such as Wakeford (1981) point out that rather few field studies actually adhere to the structured approach. Unstructured ("informal") or semi-structured interviews are prevalent, partly because of the attraction of allowing the interviewees to develop their answers in their full complexity outside any pre-structured format. For the purpose of obtaining information that the researcher could not get from the task-based data, questionnaire data and classroom observation data, informal interviews were undertaken because informal interviews give the interviewees room to develop their views and speak more widely on the issues raised by the researcher.

Three teachers who teach English writing in the English Department of Taiyuan Teachers College and six students who have had the SFL lessons were interviewed in this research study. One of the three teachers interviewed is an

experienced teacher with 35 years of English teaching experience and the other two are middle-aged female teachers. Interviewing these teachers is important and necessary for a better understanding of their teaching experience, feelings, views, attitudes and reflections on the actual teaching situation and because they know their students very well. Obtaining the students' views in a small group environment is also very helpful to acquire further information such as their views towards SFL and the application of its grammatical features to supplement the objective information. The six students were purposely chosen from the different levels with two from each level. However, to conform to social norm, their permission to be interviewed was obtained beforehand by sending letters to the department and the prospective interviewees themselves to solicit their support for the research study.

As mentioned above, the interviews were informal. In terms of this, the interviews were conducted in a very relaxed atmosphere. The teachers' interview was undertaken in an afternoon during their free hours in one of the teachers' office with afternoon tea. The three teachers and the researcher started talking freely about the research study and what research they have conducted and later on moved to the related topic of teaching English writing covering aspects that challenge the students in their English writing such as typical grammar mistakes in writing, cohesion and coherence, cultural difference and English writing, spoken and written English, academic writing, current problems in the teaching of English writing and the reflection of the teachers on their experience in teaching English writing. The students' interview was conducted in a classroom in a late afternoon after the afternoon classes. The classroom was very quiet at that time without any interruption and the students seemed to be relaxed after a whole day of lessons and it was the right time to have a talk with the students. They were very happy to share their learning experience with the researcher. The talks started with the students asking about the researcher's life and study overseas and this research study. It is good to communicate the research study to the students and to know more

about them. The talk gradually moved on to the interview questions about their views on SFL learning. These include their feelings, attitudes, reflections, understanding of the theory and its application, learning difficulties and problems and effectiveness of SFL in improving the students' writing skills. The questions were open ended without any limit on time and ideas. However, what the researcher tried best was to let each interviewee have a chance to talk and to get more information relevant to the research questions.

The teachers' interview went smoothly because they all have had interview experience and they were really serious in the interview. Most importantly they are very familiar with the area they were talking about and they could always focus on the topic. As to the students' interview, the researcher at times had to redirect the students to focus on their points using the techniques such as asking questions or getting different students to talk about the same subject to ensure as much information as possible is collected.

The interviews were recorded using a Panasonic Walkman with a microphone extension, and were later transcribed and translated into English. In order to allow the teachers and students to express themselves freely, both media of English and Chinese were applicable so that they would feel comfortable with their expressions and ideas. The research also took notes of the discussions as much as possible during the interviews. The notes record not only what each teacher or student have talked about but also who have talked in the interviews. The teachers and the students interviewed are coded as T1 (Teacher one), T2 and T3 and S1 (Student one), S2, S3, S4, S5 and S6. The interviews typically lasted for two hours but each individual had different share of time depending on the degree of the information they gave.

The interviews are recorded, transcribed, translated and sorted out according to the codes used by the researcher. As the interviews were informal and the researcher had chances to clarify at times some information and noted them

down, it helped to avoid misunderstanding of the information given by the interviewees. After transcribing and translating the interview data, the researcher categorises teachers' and students' information into themes in relation to the Research Objectives 4 and 6. The interview data were analysed immediately after the interview. The themes are showed as follows:

- ***Teachers' views***

Theme 1: Typical grammar mistakes in writing

Theme 2: Cohesion and coherence

Theme 3: Cultural difference and English writing

Theme 4: Spoken and written English, and academic writing

Theme 5: Current problems in the teaching of English writing

- ***Students' reflection and feedback***

Theme 1: Attitude towards SFL

Theme 2: The reflection and views on the four SFL grammatical features

The reflection and feedback on Theme and Rheme

The reflection and feedback on lexical density

The reflection and feedback on nominalisation

The reflection and feedback on grammatical metaphor

6.3.2. Data analyses of the teachers' views and results

Getting information from the teachers' perspective is important and necessary because the views of teacher interviewed help the researcher know more about the actual teaching and learning situation. The teachers' opinions, attitudes towards teaching, their reflections on teaching and their students' learning

situation benefit the researcher by allowing her to gauge in this research study the effectiveness of SFL in enhancing the students' writing skill and the problems the teachers face. The teachers' opinions are reported according to the themes below.

- ***Theme 1: Typical grammar mistakes in writing***

Grammar for many years has been considered as one of the most crucial aspects of English teaching and learning in China, especially in English writing as accuracy is important. However, grammar mistakes seem to be very common and serious in the English writing of Chinese students. This has been considered a serious problem in English teaching and learning. English teachers are very sensitive to grammar mistakes. The grammar mistakes involve problems with parts of speech, subject/verb agreement, number agreement, articles, tenses, parallelism, pronoun reference, independent and dependent clauses and sentence length. General opinions of the teachers interviewed on typical grammar mistakes are shown below.

From Grade 1 to 4, 30% of the students are poor in grammar, e.g. in verb agreement, tense agreement, pronoun reference and number agreement. From the syntax and rhetoric aspects, they do not know how to use the language effectively and use the wrong rhetorical syntax and so on. (T1)

Teacher 1 (T1) gave a percentage of students who made grammar mistakes. Apart from the common mistakes of verb agreement, tense agreement, pronoun reference and number agreement, he also revealed that syntax and rhetoric problems exist in students' writing.

We can find a lot of similar errors in the students' examination papers, writing assignments and graduation papers. For example, "Mary was

sitting by the window having a cup of coffee when it broke.” In this sentence, the error in pronoun reference occurs when reference is ambiguous and the correct one should be “Mary was sitting by the window having coffee when the cup broke.” (T2)

Following T1’s remarks, T2 gave an example of ambiguous pronoun reference and provided further evidence that many similar mistakes are found in the students’ examination papers, writing assignments and graduation papers.

Grammatical errors in Chinese students’ English writing are very common and serious. The errors include not only spelling mistakes but also other errors such as employing the wrong words, wrong or missing verb ending, wrong, missing preposition, possessive apostrophe, wrong tenses or verb form, lack of subject-verb agreement, lack of agreement between pronoun and antecedent, sentence fragment, punctuation errors and so on. (T3)

T3 expressed her same feeling of common grammar errors in the writing of her students and she pointed out further that there are other mistakes such as employment of the wrong words, lack of agreement between pronoun and antecedent, fragmented sentences and punctuation errors.

I think some of the typical errors made in their (English) writing are influenced by the Chinese language. The “there be” structure is a typical example, such as “there were many students do morning on the playground”. The student used two verbs in this clause and this is wrong based on English grammar. Other examples are: “I can not imagine what life will be if had not money”. and, “He was working so attentively that ignored my coming into the room”. In these sentences, there are no subjects in the adverbial clauses. (T1)

T1 analysed that some of the mistakes are made because of the influence of the Chinese language. He gave the example of the “there be” structure. The student put two verbs in this structure which breaks the rule of English grammar. However, it is correct based on the Chinese language. The second example is also typical. When expressed in Chinese, it is fine to omit the subject in the adverbial clause but this is not the case in English.

There are some other very popular errors such as “although/though...but...”, “because...so...” and so on. These errors are all attributable to the influence of Chinese. (T3)

T3 gave further examples of errors in English conjunctions made by Chinese students. In Chinese, the “although” clause must be followed by a “but” clause and so is the case of the “because ... so” expression. Chinese students are used to the Chinese structures and as a result they use similar Chinese sentence structures in their English expressions, which violate the rules of English language.

From the teachers’ responses, the researcher finds that grammatical mistakes are very common in students’ examination papers, writing assignments and graduation papers. The percentage of students’ who have grammatical mistakes in their writing is as high as 30%. The mistakes cover almost all general grammatical mistakes such as verb agreement, tense agreement, pronoun reference and number agreement. In addition, syntax and rhetoric mistakes, employing the wrong words, lacking of agreement between pronoun and antecedent, fragmented sentences and punctuation errors are also very common. The teachers interviewed also revealed their analysis of some of the reasons why students’ make these mistakes. One of the main reasons is the difference between English and Chinese languages. For example, students are used to using the “because...so”, “although/though...but” structure in Chinese. These are set structures and cannot be separated. However, students tend to apply the

Chinese structures in similar English clauses. Great efforts have been spent on error analysis, error corrections and this seems to have changed the teaching focus of the teachers in English writing.

- **Theme 2: Cohesion and coherence**

In addition to the typical grammar mistakes, the teachers also find that the students are poor in writing cohesive and coherent clauses which is very crucial in English writing. Cohesion means linking phrases together so that the whole text is clear and readable. It can be achieved by using conjunctions and linking phrases and clauses with words like he, they and that which refer back to something mentioned before so as to clarify the relationships among ideas in a piece of writing. Coherence means natural or reasonable connection as well as logical and aesthetical relationship between parts in speech, writing or argument. In writing, it is important for the students to be aware of the relationship of ideas because a text is a semantic unit which is dictated by its interpretation within a particular context or environment. In this case, cohesion and coherence are taken as one of the important aspects in the teaching of English writing. The teachers' views are presented below.

Actually, we have taught the students a lot about the cohesive relationships between words and clauses which have certain definable qualities that allow us to construct a clear and readable sentence, such as reference, substitution, ellipsis, and conjunction. However, it is very hard to get the students to use them in their writing. (T1)

T1 complained that the students have been taught the techniques to write clauses with ties or relations so as to organise or create a text. However, they seem to have difficulties using these techniques in their writing.

We all know that cohesion and coherence are techniques in English writing. However, teaching these techniques is not effective. I think there are several reasons why they are poor in using these techniques. Firstly, the students lack the awareness of the formation of the English language because it is different from the Chinese language which pays more attention to the combination of meanings. I will take one of my students' writing as an example: "the writer wrote many novels in his life. The novels are all about social problems." Instead of the two separate sentences, we may revise these sentences to "the writer wrote many novels in his life and they are all about social problems". Secondly, the students need more time to learn to enjoy the art of English language and explore how to express themselves more clearly, logically and beautifully in English. Thirdly, the students don't write often enough, even though they have learnt the techniques of how to write text clear and readable texts. Teachers should give students more samples and show them how to improve their writing and let them compare their original texts with the revised ones. (T2)

T2 also stressed the importance of cohesion and coherence in English and analysed the reasons why students cannot apply the techniques in writing cohesive sentences. Firstly, they have no awareness of the formation of the English language. Secondly, they do not understand or seek to understand how meanings are expressed in English. Lastly, they need more practice. T2 also gave some practical suggestions as to how to solve the problems by having samples analyses, revising and comparing the students' writing exercises.

Developing the students' ability to use what they have learnt is more important than just teaching the knowledge. What we should do now is not only to teaching students the techniques of English writing but also to improve their writing ability. (T3)

T3 added that English writing teachers should focus their attention on how to develop students' writing ability rather than to just teach writing techniques. She also stressed the importance of helping students to use what they have learnt.

Nothing can help without practice; so the students need more exercises.

(T3)

T3 suggested that only more exercises can encourage the students to use the techniques they have learnt and help them improve their writing skills.

A good text expresses a clear point, is tightly structured, grammatically and syntactically correct, substantive and interesting. Expressing a clear point is rated as the foremost important criteria for a good piece of writing. Cohesion and coherence are the techniques which enhance the clarity and readability of a text and set up the logical and aesthetical relationship between speech and writing. The teachers interviewed complained about poor cohesion and coherence in their students' writing even though the students have been taught the techniques. The reasons are summarised as: (1) The students have no awareness of the formation of the English language. (2) They have not explored how meanings are expressed in English. (3) They need more practices. In order to solve these problems, the teacher interviewed had put forward suggestions of having more sample analysis, revising and comparing the students writing exercises. The teachers further suggested other that teachers should develop students' writing ability rather than just teaching writing techniques. The only way to help students to use what they have learnt is to ask them to write more.

- ***Theme 3: Cultural difference and English writing***

Language and culture are interrelated. Language is influenced and shaped by culture and it reflects culture. However, culture would not be possible without language. In the broadest sense, a language is the symbolic representation of a group of people, and it comprises their historical and cultural backgrounds as well as their ways of living and thinking. Languages differ from one country to another and therefore, when teaching English to Chinese students, awareness of cultural differences should also be noted. Apart from grammar errors and cohesion and coherence problems in writing, Chinese students also make mistakes in English writing because of the culture differences. The three teachers talked about their views on the differences between English and Chinese cultures and Chinese students' English writing.

Chinese students learning English are challenged by the cultural differences between the two languages. Awareness of the English culture is important in English writing. English and Chinese both have their own ways of expression and conventional usages. As an English language learner, we should respect the English culture and its language expressions or we will make mistakes of various sorts and use inaccurate expressions in writing. (T1)

T1 firstly mentioned the importance of cultural awareness in English language teaching and learning and stressed that English language students should consider the culture of English speaking countries and their conventional language expressions when the students write in English.

My students are still having problems writing English essays without topic sentences which will be mentioned only towards the middle or the end of the text. This reflects a Chinese thought pattern. However, in English, the structure demands for a clear introduction, development,

and conclusion which logically progresses from the top to the bottom of a document in a vertical manner. (T2)

T2 gave an example of the problems in her students' English writing using Chinese thought patterns which are characterised by having no topic sentences and this is contrary to the English writing style.

I found the same problems in my students' writing which are summarised as: Firstly, they have no awareness of the requirement for a topic sentence and therefore, their ideas are not clear in their writing. Secondly, even if, they have a topic sentence, the topic sentence sometimes is too general to narrow the scope and as a result the topic sentences cannot indicate the direction of the paragraph. Thirdly, in the body of their paragraphs, there are not enough examples, descriptions and comparisons to support their ideas or the topic sentence. (T3)

T3 mentioned the same problem of her students in lacking topic sentences in their writing and attributed the problems to three reasons: (1) no awareness of using topic sentences; (2) very general topic sentences without giving a strong direction to the paragraph; (3) lacking examples to substantiate the topic sentences.

As we mentioned before, some wrong correlative conjunctions such as "because...so..." and "although/though ... but..." are mistakes made by my students in their writing which are influenced by the Chinese ways of expression. (T1)

T1 gave examples of the mistakes in correlative conjunctions arising from the differences between the English and Chinese languages and cultures.

In addition to cultural differences in writing, mistakes in correlative conjunctions and Chinglish (Chinese English) expressions stemming from the differences between the English and Chinese languages and cultures, the teachers interviewed focused their attention mainly on the influences of Chinese thought patterns in English writing. The outcomes of these influences include omissions of topic sentences. Other mistakes are that the topic sentences are too general to be topic sentences failing to give directions to the paragraphs and that there is a lack of suitable examples to support the ideas of the topic sentences. In Chinese grammar, the topic sentences are not required and the topic sentences may appear anywhere in a paragraph. However, in English writing, a paragraph is characteristically a series of sentences that are organised and coherent, and are all related to a single topic which helps the reader see the organisation of the essay and grasp its main points. Therefore, helping students to embrace English thought patterns is what teachers should do in future teaching.

- ***Theme 4: Spoken and written English, and academic writing***

One of the most important differences between spoken and written language is that written language displays a much higher ratio of lexical items to the total number of words (Halliday, 1985c). The difference between written and spoken language is one of density: the density with which the information is presented. Relative to each other, written language is dense, spoken language is sparse. To say that written language is “denser” is to suggest that, if we look at it from the perspective of spoken language, then written language will be more complex. We may say that the difference between spoken language and written language is one of intricacy, the intricacy with which the information is organised. Spoken language is more intricate than written. “Spoken language is more complex than written, but each is complex in its own way. The complexity of written language is lexical, while that of spoken language is

grammatical”(Halliday, 1985c, pp. 61-63) . Academic writing consists of attitudes and intellectual operations except style or format. In addition, ideas, evidence, research methods and organisation should also be included. Spoken and written English and academic writing are also aspects which have been ignored in the teaching of English writing. The opinions of the teachers interviewed are presented below.

Some of the students' writings are more like face-to-face conversations or spoken narratives. They have more clauses and functional words and are full of repetitions. At the clause and sentence levels, their writings are less dense in content, have more clauses but contain less information and events, are characterised by colloquial vocabularies and are also poorly planned. (T1)

T1 mentioned that the writings of his students are closer to the spoken format than the written format with more clauses, functional words and lots of repetitions. These writings are less dense in content, poorly planned and contain lots of colloquial words.

They often use “because” to start a new sentence, such as “because even at present, most high-level jobs are provided only to men”. The students also like to use colloquial expressions. Words like “anyway”, “ok” and sentences such as “many people cannot get their heads around this idea” are often seen in their writing. (T2)

T2 gave some examples of the students beginning their sentences with “because” and using colloquial words and phrases.

My teaching focuses more on teaching from the macro-angle rather than micro-angle. This means that my teaching pays more attention to help students get to know the features of different genres especially academic genres, choose the right topics, collect reference materials,

analyse structures rather than to develop their writing skills. Therefore, I do not teach my students lexical density, nominalisation and grammatical metaphor. However nominalisation is seldom used in Chinese writing. (T3)

T3 shared with the researcher that her teaching focuses more on features of different genres, choices of topics, means to collect reference materials and analysis of structures rather than on the development of the students' writing skills. She has never brought SFL to the students' attention and she said that there was no nominalisation in Chinese language.

The expressions in the students' writing are more spoken rather than written with no sentence and paragraph boundaries. It seems that they pay no attention to the structure of their sentences and write whatever they are thinking, such as in casual conversations. (T1)

T1 complained that the style of her students' writing was more spoken rather than written, just like casual conversations and they had no awareness of what the written language should be.

Fragmented sentences are one of the most common types of problems in students' writing such as the separation of adverbial clauses or prepositional phrases. For example, "Because China is a country with very big population."; "Although education in has greatly improved.". These expressions are quite common in their conversations. (T3)

T3 mentioned about fragmented sentences with the separation of adverbial clauses or prepositional phrases and examples were given.

Actually my students have no idea of the differences between written and spoken languages. They do not know the characteristics of written

and spoken languages. As a result they write without having in mind what written English should read like. (T2)

T2 explained that her students knew nothing about the differences between written and spoken languages.

The students are still poor in academic writing though they have some knowledge about the structure of academic writing. It is very hard for them to write lexically dense sentences and use nominalisation. (T3)

T3 mentioned that her students knew more about the structure of academic writing rather than wrote lexically dense sentences and they did not use nominalisation in their writing.

Actually we have spent little effort in enhancing the students' awareness of written language and academic writing in our teaching. (T1)

T1 summarised that they have done little in enhancing the students' awareness of written language and academic writing in their teaching.

With regard to spoken and written English and academic writing, the teachers interviewed responded that the students' style of writing was more spoken than written. Their essays have more clauses, functional words, repetitions, colloquial words, fragmented sentences with separated adverbial clauses or prepositional phrases, and are less dense in content and poorly planned. For example, they often begin their sentences with "because" and used the word "ok". The teachers also informed the researcher that in their teaching they normally focus more on different genres, choice of topics, collection of reference materials, analysis of how the students construct their papers so that the students will have better ideas about how to write their graduation papers instead of on developing the students' writing skills. The students know more

about the structure of academic writing rather than how to write lexically dense sentences and use nominalisation. The teachers have done very little in their teaching to enhance the students' awareness of the characteristics of written English and academic writing.

- ***Theme 5: Current problems in the teaching of English writing***

In the above four themes, the teachers interviewed gave detailed information about their views on typical grammar mistakes in writing, cohesion and coherence, cultural differences, English writing, spoken and written English, and academic writing. They even gave examples to illustrate the different problems the students have in their English writing and the reasons why the students make such mistakes were analysed from both subjective and objective ways. In addition to the above themes, the teachers' opinions on current problems in the teaching and learning of English are presented below.

I think limited vocabulary is one of the major hindrances in improving the students' writing skills. The students do not have enough words to express their ideas and they have difficulties in using the words that they have learnt. (T1)

T1 pointed out that the biggest barrier in improving the students' writing skills was limited vocabulary. With a limited lexicon, the students cannot express themselves properly. As a matter of fact, they have difficulties using the words they have learnt.

According to the High Education Syllabus, English major undergraduates should master 6000 words. However, they can only use 2000 to 3000 words in their writing at the time when they graduate. (T2)

T2 shared some figures to illustrate the situation of the students' limitation in vocabularies. The fact is that students can only use half or less than half of the vocabularies they have learnt.

Actually I heartily empathise with my students because they work so hard and they memorise new words they learn in class, after school and in the week ends. Unfortunately, they have few chances to use them and will gradually forget them all. Students memorise new words based on Chinese equivalent rather than explore the usage of the words according to the context. They often create some words and expressions based on the Chinese expressions or culture, such as "red tea (black tea)", "fast train (express train)" and so on. (T3)

T3 expressed her empathy with her students who spend a lot of time memorising new vocabularies but the result in the end is not as good as they expected. The reasons are: (1) the students have no chance to use the words; and (2) to help themselves memorise the new words, the students tend to look for the Chinese equivalents of the English words without paying attention to the contexts where these words are used. As a result, they created words and expressions based on the Chinese expressions or culture which bear no reference to the English language and its culture.

I have the feeling that the main problem in our teaching is that the teachers of different courses, such as intensive reading course, extensive reading course, language and cultural course, writing and translation, have never communicated with each other about their teaching. We just take it for granted that the other teachers must have taught the students this and that. Therefore, we do not have to teach this again and the students must have known it. In fact, no teacher has taught the knowledge students needed. (T2)

T2 pointed out the problem in teaching and she thought that the teachers of different courses lack communication amongst themselves on what they have or have not taught and they think that the other teachers must have taught what they should teach. The students thus become “victims”.

I think teaching should be about developing students' learning abilities rather than a mere transfer of knowledge. Teachers should explore ways of developing students' learning strategies. For example, reading and writing are interactive and interrelated and they complement each other. Reading helps students improve comprehension and expressions; develop ideas; increase their vocabularies; and learn to use the appropriate voices in their writing. So, reading is helpful to developing the students' writing skills. Let the students read more and learn the writing techniques from reading and they can do it themselves. (T1)

T1 proposed that developing students' learning strategies and abilities is more important than teaching the knowledge. He gave an example of developing students' writing skills through reading from which students would benefit a lot and also improve their self-learning abilities. He has the idea of changing the teaching directions.

Most textbooks on writing focus on the analysis of the genre. So the teaching is more on the theory of genre and genre analysis. They neglect the sample text analysis and the process of developing the writing of various genres from the students' perspectives. In a sense, the aim of the textbook authors is to have the books published, rather than developing the students' writing skills. (T3)

T3 complained about the problems of the textbooks they are using. The textbooks are all about teaching students the construction of different genres with less focus on the development of the students' writing proficiency.

I agree to the idea that teaching of writing should focus more on the grammatical and lexical features which are essential for ESL/EFL learners because these are the tools for the students to build a text. Students must have the language foundations in place before they can successfully produce a piece of writing. (T2)

From the point of view of T2, teaching of writing should be centred on fundamental grammatical features which are essential for ESL/EFL learners to start to write correctly. So, she stressed on the importance of language foundations in the teaching of writing.

In response to the questions on their views on the current problems in the teaching of English writing, the teachers interviewed mentioned four points. (1) Limited vocabulary is the biggest barrier which restricts students from expressing themselves freely. Of the 6,000 required words for English major undergraduate students, students commonly use only 2,000 to 3,000 different words. The reasons are: (a) Students have very few chances to use the language and the words. (b) They memorise new words without paying attention to the context which helps them memorise, they associate the English words with the Chinese equivalents. As a result, they forget the words easily or use the words without conforming to the English expressions or culture. (2) The teachers of different courses do not communicate their teaching programs amongst themselves and this has led to students' learning situation being ignored. (3) The teaching focus is more on teaching knowledge rather than developing the students' learning strategies or abilities, for example, developing writing skills through reading. (4) The textbooks are all about the construction of different genres rather than developing the students' writing abilities. (5) The students' understanding of fundamental grammar is neglected which is an essential ingredient for ESL/EFL students to learn to write correctly. However, what is gratifying most is that the teachers are aware of the problems and are thinking of the ways to deal with the problems.

6.3.3. Data analyses of students' reflection and feedback and results

The students' interview focused on their attitudes towards SFL, reflection and feedback on Theme and Rheme, lexical density, nominalisation and grammatical metaphors. Lewin (1946) describes action research as a spiral of steps. Each step has four stages: planning, acting, observing and reflecting. Getting the reflection and feedback from the students is essential for the researcher to know the students' interests in learning SFL, the effectiveness of SFL in enhancing the students' writing skills, and difficulties faced by the students in learning the SFL grammatical features. The reflection and feedback from the students progress the research to the next step of re-planning so as to enhance the teaching quality. The students' ideas, attitudes, reflections and feedback collected at the interview will be presented below.

- ***Theme 1: Attitude towards SFL***

According to the Systemic Functional Linguistics (SFL) theory, the structural shape of a clause in English is determined by the three metafunctions – ideational, interpersonal and textual (Halliday, 1985b, p. 53). These are the three kinds of meaning that are embodied in human language as a whole, forming the basis of the semantic organisation of all natural languages. Each of the three metafunctions is about a different aspect of the world, and is a different mode of meaning of clauses. The ideational meaning is that we use language to talk about our experience of the world, including the worlds in our own minds, to describe events and states and the entities involved in them. The interpersonal meaning is that we use language to interact with other people, to establish and maintain relations with them, to influence their behaviour, to express our own viewpoint on things in the world, and to elicit or change theirs. The textual meaning is that we use language to organise our messages in ways which indicate how they fit in with the other messages around them and with

the wider context in which we are talking or writing (Thompson, 1996, p. 28). The three metafunctions are the soul of SFL and this theory helps understand language from meaning and function rather than structure. Here are the students' views on SFL.

It is quite interesting and I prefer to learn something new. Before I learnt these features, I had no idea of what SFL is and what the three metafunctions of language - ideational, interpersonal and textual - are. Now I start to know what these metafunctions are, but sometimes I am a bit confused by all the terms used to analyse the meanings and functions of the sentences. (S1)

S1 mentioned that SFL was very interesting and he preferred to acquire a new knowledge. He had some ideas about what the metafunctions of SFL is, but was confused by the many SFL terms.

I think the SFL features of Theme and Rheme, lexical density, nominalisation and grammatical metaphor are quite useful in developing my writing skills. However, this is the first time I have seen this theory which is still not commonly taught at the undergraduate level. I need time to do further study and read more related materials which will help me refresh what I have learnt. (S2)

S2 gave a very positive answer to the usefulness of the grammatical features of the SFL in developing his writing skills. However, it seems that he did not quite understand about what he had learnt as he said he needs time to refresh.

Generally speaking, SFL grammatical features are very useful in developing my writing skills. The SFL theory is more scientific than the traditional grammar because it pays attention to not only grammatical structures but also meaning and function of the language. (S3)

S3 had the same opinion as S1 and S2. He thought the SFL grammatical features were useful in developing writing skills and he further mentioned that SFL was more scientific than traditional grammar theory since the SFL theory pays attention to both grammatical structures and meaning and function of the language.

I can still remember the idea of Halliday that learning language is learning how to mean. In order to be able to mean, one has to master a set of language functions, the ideational, the interpersonal and the textual functions. (S4)

S4 seemed to have a general understanding of SFL, the three metafunctions of language and Halliday's idea that learning language is learning how to mean.

In general, I like the theory and I am quite interested in the principle which centred on the notions of language function, what language does and how it satisfies the needs of society. (S5)

Having the same attitudes as S1, S2 and S4, S5 was also interested in the theory of SFL which studies the language function to satisfy the needs of society.

I think the SFL analysis is very complicated though the theory is easy to comprehend. However, it is difficult to analyse the three metafunctions. I am more interested in how to use the language rather than the scientific study of the language itself. It is the job of linguists and I don't like linguistics. (S6)

S6 thought the SFL theory was reasonably easy to understand but the analysis of the three metafunctions was difficult and complicated and it was the job of linguists. He is more interested in the use of language and he does not like linguistics.

From the responses to the questions about attitudes towards SFL, the six students interviewed all presented their views. They all agreed that SFL is scientific and its analysis of the three metafunctions in language logical though some of them had further ideas. Five of the six responded positively that they had a general understanding of SFL. Three of them said that they were interested in learning SFL. Three agreed that the four grammatical features are useful in developing writing skills. However, two of them expressed that they had difficulties in learning SFL or were confused by the SFL terms. One student expressed his negative feeling towards SFL, saying that it was hard and complicated to understand. He also thought that the analysis of SFL was the job of linguists and he does not like linguistics and is more interested in using language rather than linguistic analysis.

- ***Theme 2: Reflection and feedback on the four SFL grammatical features***

The four SFL grammatical features refer to Theme and Rheme, lexical density, nominalisation and grammatical metaphor which are very important in developing writing skills. When we look at a language from a textual metafunction viewpoint, we can see how a speaker or writer constructs his conversation or writing smoothly. In the textual metafunction, a clause is analysed into Theme and Rheme. Theme functions is a “starting point for the message” (Halliday 1985a:39) and the element which the clause is going to be “about” has a crucial effect on orienting listeners and readers. Rheme is the rest of the message, which provides the additional information to the starting point and which is available for subsequent development in the text. Lexical density is used to measure the density of information; nominalisation is the use of a verb or an adjective as a noun and a grammatical metaphor is a substitution of one grammatical class or one grammatical structure by another. Halliday (1998a) points out that lexical density, nominalisation and grammatical metaphor are the main lexicogrammatical characteristics of the written

(academic) language. In a sense, getting the students' views on and gauging their understanding of the four grammatical features and their application are important to help ensure the validity and reliability of this study. The analyses are categorised by themes and the responses are presented below.

Reflection and feedback on Theme and Rheme

The Theme and Rheme theory is new to me but I can easily understand the theory. I think thematic progression is the most useful part of the Theme theory because it helps me develop coherent text and make my writing more logical by linking the ideas with one another. As to the application, I think I can understand what the others write but it is hard for me to apply the theory freely in my writing. (S1)

S1 expressed that she could easily understand the Theme and Rheme theory and thought that thematic progression helped her develop more coherent texts and made her writing more logical by linking the ideas together. She had an appreciation of what other people write. However, it was still early stages for her when it came to application of thematic progression in her writing.

I can understand how the teacher analyses the text and why and how the writers use different words to express their meanings and functions. It is very interesting and useful. However, I am sometimes confused by the different analyses of Themes such as interpersonal Theme and textual Theme. Anyway, at least I have the awareness of using Theme and Rheme in my writing. (S2)

From S2's point of view, he had no problem in understanding the teacher's analysis of the text and how the writers conveyed their meanings with different expressions. He was confused by the analysis of interpersonal and textual Themes, but he had tried to use Theme and Rheme in his writing.

With regard to Theme and Rheme, I can understand the theory and use it in my writing. The patterns of thematic progression are also very helpful for me because from these patterns I have learnt the techniques to keep my writing coherent which I have not realised before. I like the exercises which we were asked to do after learning the Theme and Rheme features. We were asked to rearrange a group of sentences into a coherent paragraph. When I was doing this exercise, I tried to find the topic sentence from the five or six sentences and then tried to find the Theme or Rheme connection. This is effective in developing coherent writing and I did a very good job. (S3)

S3 had the same opinions as S1 and S2 on Theme and Rheme. She could not only understand the features but also apply them in her writing. She said that she had never realised the techniques of the thematic progression patterns which can help her write more coherently. It was quite important for her to have the idea to find the connection between the Themes and Rhemes in various sentences. This was the kernel of thematic progression patterns.

Sometimes it is a bit hard for me to distinguish multiple Themes. I need more sample writing analyses and practices. I have tried to write a topic sentence in my writing and then write the supporting ideas which are related to the Theme or Rheme in the topic sentence. (S4)

S4 found it difficult for him to distinguish multiple Themes and suggested that he needed more sample writing analyses and practices. In terms of application, he was aware of the relationship between Themes and Rhemes in the various sentences in a coherent paragraph.

I can both understand the Theme and Rheme feature and use it. I can also distinguish the different kinds of Thematic progression patterns. I know how I can write coherently, but my application is limited to

sentence level. I am very happy to have learnt the idea of semantic coherence. (S5)

In terms of understanding and using Theme and Rheme, S5's answer is positive. She knows how to write coherently; however, the application was limited to sentence level and not yet to text level.

Understanding the feature is not a problem. However, using it in my writing of a text is hard and sometimes I forget the subsequent development of the events in the text. (S6)

S6 has no problem understanding the theory. Similar to S5, his application was limited to sentence level rather than text level and at times he could not build up the subsequent events in a coherent manner in the text.

The students interviewed all presented their views and reflection on Theme and Rheme. All six students were positive towards the learning of the Theme and Rheme theory and they had no problem in understanding it. S1 claimed that she could easily understand the theory and S3 said that she could not only understand but also use it the theory in her writing with ease. Four of the six students interviewed found the thematic progression useful in helping them to develop cohesive writing and build up subsequent events coherently in the text by finding out the relationships between Themes and Rhemes. However, four also expressed their weaknesses and problems, including their limitations when using thematic progression, the confusion about interpersonal and textual Themes, limited application at sentence level which means they have problems in building up a logical sequence of events in the text. All of them were aware of Theme and Rheme and thematic progression.

Reflection and feedback on lexical density

The learning of lexical density helps me realise how many different types of words there are in a text. Lexical density is a measure of how much information there is in a particular piece of writing or how much meanings have been packed into one clause. The more the content words, the higher the lexical density it is in a sentence. We need time to compare and analyse spoken and written sentences and progress to writing lexically dense sentences. (S1)

S1 said that he understood lexical density and how information was packed into one clause and how lexical density was measured. He also knew that the number of content words in a clause decides the lexical density of the clause. He suggested that the students should have more practice comparing and analysing spoken and written English and try to write lexically dense sentences. This reveals that she was poor in application.

By studying lexical density I know how to distinguish spoken and written English. Speech is low in lexical density with grammatical complexity, but writing is high in lexical density. After reading the examples given by the teacher, I am definitely frightened by the lexically dense style of science writing. The content words are packed one after another. As a result it is difficult to understand the passage because too much information is given. Anyway it is the characteristics of science writing, but as a foreign language student, it is important to know the style of English writing so as to develop my own. (S2)

S2 expressed his point of view on lexical density which distinguishes spoken English from written English. Written English is lexically dense whilst spoken English is lexically sparse but with grammatical complexity. He also

mentioned that high lexical density is the characteristics of science writing and he pointed out the importance of knowing the English writing style.

I could not tell why spoken English is different from written English before I learnt the grammatical feature of lexical density. I had never heard of “lexical density” before I learnt the feature and I did not even know what a “content or functional word” is. I think lexical density is a very useful concept for my writing skill development and I am very happy that I have learnt something that I did not know. In addition, it is also important to know how to calculate lexical density as this helps distinguish spoken English from written English. (S3)

S3 was very happy to learn something that she did not know because she had had no idea about lexical density or content and functional words before. In addition, she has also learnt how to calculate lexical density which helps distinguish spoken English from written English.

What surprised me most is that how a sentence with high lexical density is different from one with low lexical density. Now I understand that spoken language tends not to convey too many meanings at one time and is less lexically dense. I remember clearly that on average a speech is 33% lexically dense, whilst a written text is 42% lexically dense. (S4)

Having the same opinion as S1, S2 and S3 that sentences with high lexical density are written English and, on the contrary, sentences with low lexical density are spoken English, S4 mentioned that on average a speech is 33% lexically dense, while a written text is 42% lexically dense. He clarified the difference between spoken and written English.

I thought sentences with complex grammatical structures should be written English and I was wrong. One of the characteristics of written

English is that it has high lexical density but comparatively simple grammatical structures. (S5)

S5 revealed her wrong concept of written English which she thought should have complex grammatical structures. After being taught lexical density, she knows that one of the characteristics of written English is that it has high lexical density and comparatively simple grammatical structures.

With lexical density in mind, now when I write, I will think about how to pack more meanings in one clause. In the SFL class, when I was asked to revise a speech sentence into a written text by filling in the missing words with their noun forms, I felt it was very hard because sometimes I did not know the words. Writing with high lexical density is not easy. (S6)

S6 was happy that he was more aware about packing more meanings in his writing after learning the grammatical feature of lexical density. However, he had difficulties in writing highly lexically dense sentences because of his limitations in vocabulary.

Apart from reflection and views on Theme and Rheme, the students interviewed also presented their views on lexical density. It is interesting to note that all six students each have their own different points of view. However, when listening closely, the researcher found that they were building on each others' comments and offering supplementary information about lexical density. S1 expressed her idea that the number of content words in a clause decides the lexical density of the clause. In addition, S2 gave further information that lexical density distinguishes spoken English from written English and high lexical density is the characteristics of science writing. Written English is lexically dense, whilst, spoken English is lexically sparse but more complex grammatically. S3 acquired the idea of content and

functional words and she also revealed that she knew how to calculate lexical density. Furthermore, S4 pointed out that on average, the lexical density of a speech is 33%, whilst the written text is 42%. Apart from S1, S2, S3 and S4's information, S5 supplemented that written English has high lexical density and comparatively simple grammatical structures. In conclusion, most the six students have good understanding of lexical density. However, their weaknesses are that they need more practice comparing spoken and written English and they have difficulties writing highly lexically dense sentences.

Reflection and feedback on nominalisation

I am very happy to learn something new. I am content with the ways that the teacher used to develop our writing skills. We were asked to read a piece of writing and then compare the writing with another and identify the differences. Through the exercise, we learnt the differences between written English and spoken English. We had discussions to find out why they are different. Finally the teacher explained to us what nominalisation is in written English. It is good for us to learn the concept of nominalisation which is commonly used in scientific and academic writing. I think teaching nominalisation is necessary and important in an English writing course because without the teacher's analyses we could not have noticed such language phenomena even if we often come across nominalised forms in reading. I feel more confident using nominalisation now. (S1)

S1 felt very confident using nominalisation after the lessons and her writing became noticeably more formal. She also expressed her willingness to learn something new. She also mentioned that having nominalisation classes was necessary and important or she would have no idea of nominalisation which is characteristic of scientific and academic writing.

I think I need to connect reading with writing, I learn not only new words from reading, but also writing styles, techniques, ways of expression. However without the guidance and the analyses of the teacher, it is hard for the students to notice themselves some of the language phenomena, such as nominalisation. I really like some of the nominalised styles of writing, and I have also tried to use nominalisation in my writing by employing nominalised structures. (S2)

S2 suggested a way to improve the writing skills by connecting reading with writing. He thought he would learn not only new vocabularies from reading, but also writing styles, writing techniques and language expressions. He also mentioned the importance of teachers' guidance or they would have never noticed the language phenomenon of nominalisation. It is delightful to learn that S2 has tried to use nominalisation in his writing based on what he has learnt.

I have learnt the rules of nominalised structures, especially the complex noun phrase in academic discourse. Actually I often use nominalised forms in my writing if I am familiar with the words. (S3)

S3 has learnt the rules of how to produce nominalised structures. She used nominalised forms in her writing when she is familiar with the noun forms of the words.

After learning the rules of how to produce nominalised structures, I feel more confident using nominalised forms in my writing. However, the most important thing is that I should have a very large collection of vocabularies and know the different forms of words and how to use them. (S4)

S4 complained that the biggest obstacle of using nominalisation was the limitation in vocabulary and other problems in knowing the different forms of words and how to use them.

I had not noticed nominalised expressions and their formation before I learnt nominalisation. For example, I would often write “the development of new technology” but not really expressions like “Their removal of...”. Perhaps it is because I don’t know there are other forms of nominalisation or I am not used to using them. The teachers have never mentioned anything about nominalisation in my normal writing classes. (S5)

S5 mentioned some nominalised forms that she does not often use. The reasons might be that (1) she did not know the forms; (2) she knew but she was not used to using them and (3) she was not quite sure they were correct or not. In addition, her writing teacher had never mentioned anything about nominalisation.

In SFL classes, I could nominalise some of the sentence. However, in certain situations I still had difficulties. For example, “it crawls like a worm” was the clause the teacher asked us to nominalise. At first I just thought about changing the verb into a noun and had not thought about changing the subject into its possessive form. However, I finally got the answer: “its worm-like crawl”. So, we need to be given different examples and try to familiarise with different nominalised expressions so that we can use them confidently in our writing. Again we need more practice. (S6)

S6 talked about the reasons why he could not use certain nominalised forms. In some situations, he just considered changing the verb forms and had not

thought about using the possessive form of the determiner. He suggested to be given more examples and have more exercises.

Nominalisation as one of the three main lexicogrammatical characteristics of written (academic) language, takes an important part in academic and scientific writing. It is also the main resource of grammatical metaphor and therefore getting the reflection and views from the students on nominalisation is crucial. The analysis of the students' responses are summarised here. Out of the six students, three have used nominalisation in their writing based on the nominalised structures they have learnt. There were a number of complaints which include no awareness of nominalisation before the SFL lessons, limited vocabulary, infrequent use of the nominalised forms and no knowledge of the structure of the forms. The reasons are: (1) the students do not know the forms; (2) they know the forms but are not used to using them and (3) they are not quite sure if they are correct or not. As a result, suggestions are given to supplement writing with reading to enrich the students' vocabularies, improve their writing styles, writing techniques and language expressions. More exercises to improve the use of nominalisation were also suggested. In conclusion, the students are not competent with nominalisation.

Reflection and feedback on grammatical metaphor

I think grammatical metaphors are very useful in expressing myself and Halliday's analysis of grammatical metaphor is very interesting and also scientific. In English there are very rich expressions for the same thing. As a foreign language student, I think it is very important for us to learn these or our expression of English will be very boring and colourless. (S1)

S1 gave a positive evaluation of grammatical metaphor and Halliday's scientific analysis. She also mentioned that English had very rich expressions for the same thing and it was very important for foreign language students to learn more about native English expressions.

I am very sorry to tell that I never cared about congruent forms or metaphorical forms and spoken or written expressions in my writing. Now I have learnt grammatical metaphor. It is a substitution of one grammatical class, or one grammatical structure by another and from this I understand the congruent and metaphorical forms. However, it is not as easy as I have imagined. Some of the terms related to the analysis of the GM theory are hard for me to remember and it is also hard to connect the theory with the real sentences. Therefore, to make the theory easy to understand and easy to apply in writing, More exercises are necessary. I think we will do better, write more like a native speaker and write in a more academic style in the future. (S2)

S2 expressed his general understanding of the grammatical metaphor and mentioned that grammatical metaphor was not as easy as he had imagined and he found it hard to know the terms of grammatical metaphor analysis. He hoped by having more exercises, he could better understand the theory and apply the theory in his writing. He also wished he could write like a native speaker and in a more academic style.

The terms congruent and metaphorical were new to me when I learnt grammatical metaphor. Although I know that ideational GM is an incongruent representation of the experiential meaning, logical GM refers to ideas that are organised in an incongruent form at the level of discourse and interpersonal GM is a more implicit or explicit way of presenting the authorship in the text. I have tried to change my sentences from congruent to metaphorical and describe things

differently. I also know nominalisation is the most powerful resource for creating grammatical metaphor. Application is very limited. (S3)

S3 gave a brief description of the functions and meaning of grammatical metaphor. She even tried to change the sentences in her writing from congruent to metaphorical. In addition, she knows that nominalisation is the most powerful resource for creating grammatical metaphor. Similar to the other students interviewed, S3 also had problem applying grammatical metaphor.

It is very hard for me to connect the theory with practice, in particular to connect with the terms. They are very hard to remember. I can probably recognise the congruent and metaphorical forms but I cannot tell their particular terms such as participant, process, circumstance and sensor. Sometimes I mix them all up and I also confuse them with other traditional grammatical terms. Maybe more examples are needed to illustrate the different types of GMs. Generally speaking, it is a bit hard to learn. (S4)

S4 told his problems and difficulties in learning grammatical metaphor. He mentioned that it was very hard to remember the terms of the different analyses and also the terms of grammatical metaphor analyses even though he could recognise the congruent or metaphorical forms. He even confused the terms of grammatical metaphor with the terms of traditional grammar. He felt that grammatical metaphor was hard to learn and he suggested that the students should look at more examples and illustrations of the analyses of different types of grammatical metaphors.

What impressed me most are the “congruent” and “metaphorical” forms, for example, “The People’s Republic of China was founded in 1949. (congruent) vs. 1949 saw the founding of the People’s Republic of China. (metaphorical)”. However, other concepts of grammatical

metaphor such as ideational metaphor, metaphor of transitivity, interpersonal metaphor and interpersonal metaphor of modality and mood are very hard to remember especially these terms are quite different from what we learnt before. (S5)

S5 gave examples of sentences of congruent and metaphorical forms. However, she had difficulties understanding the concepts of grammatical metaphor such as ideational metaphor, metaphor of transitivity, interpersonal metaphor, interpersonal metaphor of modality and mood and so on, though she remembered these terms. She also mentioned that it was hard to remember the terms as they are very different from what she had learnt before.

I think I can understand the teacher in classes but I need to read more and think about the concepts so as to thoroughly understand and use them properly in my writing. I know that grammatical metaphors are mostly expressed by nominalisation. I think this grammatical feature is a bit complicated and we need more time to learn and practise. (S6)

S6 expressed that he could understand what the teacher had taught in class. However, he required time to self learn so as to have a more thorough understanding of grammatical metaphors and to use them in his writing. He had the same views as the others that grammatical metaphor was complicated that he needed time to learn and practise. However, he knew that the main resource of grammatical metaphor is nominalisation.

Grammatical metaphor has been of particular importance in the evolution of scientific writing and it is a resource language uses to condense information by expressing concepts in an incongruent form to show “objectification” and “abstraction” in the form of nominalised processes. On the concept of grammatical metaphor, two of the six students interviewed said that they understood the concept in general. S3 mentioned that she had had some

exercises to change the congruent forms in her writing into metaphorical forms and she knew that nominalisation is the most powerful resource for creating grammatical metaphor. Most of them knew the concept of congruent form and metaphorical form. However, according to their responses, the students' difficulties were in the study of grammatical metaphor such as the terms like ideational metaphor, metaphor of transitivity, interpersonal metaphor, interpersonal metaphor of modality and mood. They even confused the terms of grammatical metaphor with the terms in traditional grammar, such as participants, process or circumstances. In addition, they also had application problems. All of them suggested having more tutorials and be given more examples to illustrate the different types of grammatical metaphors.

6.4. Classroom observation data analyses and results

Observation is one of the crucial steps in action research cycle because to know how students behave in class helps in the revision of teaching plan for the future. Classroom observational data centres on observing the students' classroom discussions and involvement in activities and the results are presented in this section. According to the action research cycle, researchers should not rely on a single source data, interview, observation, or instrument. Pairing observation and interviewing provides a valuable way to gather complementary data. In addition to data collected from survey, informal interviews and other sources, the researcher also employs classroom observation to supplement the data to satisfy triangulation. As a teacher researcher, the researcher of this study had countless opportunities to observe the class and adjust her teaching based on what she saw. This research is to study the effectiveness of SFL grammatical features in developing the students' writing skills. Therefore, it is more important to focus the observation on what have happened in class such as the students' questions in relation to the understanding of the features, the students' reflections in class and their

discussions and involvement in teaching activities rather than on classroom environment and what the students do every five minutes. As such, the classroom observation notes are the record of typical events in class. Data of task-based pre-teaching and post-teaching writing exercises and the students' SFL exercises have been analysed. The data analyses of non-task-based questionnaires and informal interviews regarding the students' learning achievement, learning process, problems, reflections and feedback and attitudes towards SFL, and the teachers' views on teaching English writing are also undertaken. The situational observation in class to find out what have happened in the students' classroom activities helps satisfy triangulation. Qualitative data such as explanations with quotes from the observation sessions and notes to illuminate how and what had happened in the SFL classes are interpreted and analysed to shed light on the students' interests in SFL and their reactions in the SFL learning process. The results of the analyses are related to Research Question 1(2). (Samples of classroom observation notes are attached in the Appendix.)

6.4.1. Interpretation and analysis of the classroom observation notes

Four typical observation notes which examine in detail the students' participation in classroom activities related to the four grammatical features of Theme and Rheme, lexical density, nominalisation and grammatical metaphor are selected to give a close picture of the students' involvement. The notes are illustrated below.

Table 6.4.1.: Summary of four typical classroom observation notes

Observer	Time and Date	Level of students	Content
The researcher	3:30-6:30pm. 25th Sept. 2006 (Monday)	30 experimental group students at elementary level	Unit 2 Section 3: Theme and Rheme (Thematic progression)
The researcher	3:30-6:30pm. 11th Oct. 2006 (Wednesday)	30 experimental group students at intermediate level	Unit 3 Section 4: Lexical density
The researcher	3:30-6:30pm. 10th Nov. 2006 (Friday)	30 experimental group students at advanced level	Unit 4 Section 5: Nominalisation
The researcher	3:30-6:30pm. 8th Dec. 2006 (Friday)	30 experimental group students at advanced level	Unit 5 Section 5: Grammatical metaphor

Each classroom observation note has eight parts: (1) brief introduction of the context; (2) teaching steps; (3) general understanding of the teaching; (4) students' reflection and feedback; (5) teacher's reflection; (6) problems and difficulties in class; (7) students' interests; and (8) classroom discussions. The notes discussed in this section will focus on classroom discussions only, which include actual questions asked, conversations and activities, including the activities the teacher organised, in class. The classroom discussions and activities are analysed below.

- ***Classroom discussion on thematic progression (Unit 2, Section3, Teaching Step3)***

This was the last Theme and Rheme lesson of Unit 2 for the elementary level students. In Section 3, the teaching was centred on Theme and Rheme and

thematic progression. Classroom Observation Note 1 shows the discussion on rearranging two groups of sentences to form coherent paragraphs with the aim to help the students use the five thematic progression patterns more frequently in their work.

Teacher's instruction: You have 10 minutes to work and discuss in groups. There are two groups of sentences here. One of you in each group will read one sentence group and rearrange the sentences to form a coherent paragraph. Then please draw a diagram depicting the thematic progression patterns of each paragraph.

Classroom Observation Note 1: There were five students in this group and all are female students at the elementary level. They were coded as S1, S2, S3, S4 and S5. To give the readers a clear idea of what the students were talking about, the first group of sentences is shown as follows:

- A. Of the effects caused by vitamin A deficiency, those involving eye diseases are the most pronounced and widespread.
- B. Another result of vitamin A deficiency is skin dryness.
- C. What children eat can affect their health.
- D. Several thousand children become blind each year because of this dietary deficiency, which is most prevalent in poor, non-industrialised countries.
- E. Children who do not eat enough foods containing vitamin A can develop serious nutritional disorders.

S1: Who'd like to read the first group of sentences?

S2: Ok, I'll read it. (...)

S3: Let's find the topic sentence first.

S4: What about Sentence D?

S3: No, no. Sentence D looks like a result.

S1: I think it is Sentence C. What do you think?

S5: I agree. It tells us the fact of the event. We should then find out how and why first and then the result. Do you agree?

All: Yes.

S1: The next sentence should be Sentence E. If you look at the Theme and Rheme of the topic sentence and the start of Sentence E, they share the same Theme "Children".

S2: It is a parallel sending. And then the next we should look for the reason.

S4: What about Sentence C? Oh, I sorry mean Sentence A. In Sentence E, the Rheme is "can develop serious nutritional disorders". In Sentence A, the Theme is "Of the effects". "The effects" indicates "serious nutritional disorders". So this is the continuous sending.

S3: Look at Sentence B. It starts with "Another result". So, there should be another result somewhere. It's definitely Sentence D. It's done.

S1: The order should be C-E-A-D-B.

S2: Wait! We have not finished the patterns.

S5: I think Sentence D uses the centralised pattern. In Sentence A, the Rheme has got the word "widespread" and in Sentence D, the Rheme is "...most prevalent in poor, non-industrialised countries". It uses centralised pattern deriving from Sentence A. They refer to almost the same thing.

S4: In Sentence D, another part of the Rheme is "...become blind each year because of this dietary..." and in Sentence B, the Theme is "another result.". So, this is a continuous pattern from Sentence D.

S3: So the patterns used in this exercise are C----E (parallel), E----A (continuous), A----D (centralised) and D----B (continuous).

All: Done!!!

In the above conversation in class, active cooperation, discussion and participation could easily be observed from the students' expression such as "what do you think?" and "what about?" trying to engage the others' participation. The students cooperatively answered "yes", "I agree" and "done" when they finished the task. In the discussion, they also explained the reasons why they made their choices. Most importantly, they connected their choices to what they have learnt in class about the Theme and Rheme concept and thematic progressions. They looked at the Themes and the Rhemes in the sentences and looked for the relationship amongst them to establish a coherent and logical sequence of these sentences. From the observation, the researcher finds that all of the five students were involved in the discussion and presented their ideas. From their expressions such as "yes" and "done!!!", the happiness from the fulfilment of the task can be seen and this also indicates their interests in learning the SFL grammatical feature of Theme and Rheme.

- ***Classroom group work on lexical density (Unit 3, Section 4, Teaching Step 1)***

This was the first lexical density lesson of Unit 3 for the intermediate level students. In Section 4, the teaching was focused on lexical density. Classroom Observation Note 2 shows a pre-teaching lead-in classroom task. Before teaching lexical density, the teacher divided the students into six groups and

each group were asked to complete certain tasks based on the task cards given to them. The task cards are designed to gauge the students' knowledge about spoken and written English as a lead to the teaching of lexical density.

Teacher's instructions: Please work in groups and compare the two pieces of writing on your task cards. Then tell the differences between them in five minutes. After this, each group will report your results in turn. The two pieces of writing from Halliday (1985c) on the task cards are presented below.

Classroom Observation Note 2: There are five students in this group, two boys and three girls. They were coded as SF1, SF2, SF3 and SM1 and SM2. The researcher observed the group discussions closely and noted down some events.

Task cards:

1. Or they could be in an aeroplane and there was a great electrical storm and they were blown off course and the electricity made all the radio go dead so there were no radio sounds and nobody could hear from.
2. As a possible alternative, the aeroplane in which they were travelling might have been deflected from its course by a violent electrical storm, which disrupted radio communication and prevented them from being audible.

SM1: Have you noticed that the first piece of writing has got a lot of "and"?

SF1, SF2, SF3 and SM2: Yes, Yes....

SF1: Four "ands" connect five clauses with each other and there is an adverbial clause of purpose starting with "so".

SF2: The second one is different from the first one. It uses two attributive clauses.

SM2: The structure of second sentence seems a bit complex.

SF3: Interesting! I find something interesting, and different. Can you guess what they are?

SF1, SF2, SM1 and SM2: Tell us, please... please...

SF3: Let's look at the words of the two pieces of writing. Let's compare.

Or -- alternative; was blown off – might have been deflected from; made all the radio go dead – disrupted radio communication; nobody could hear – prevent them from being audible.

SM1: You are too great. Let's find out more.

SF1: No more. No more.

SM1: No. I think the second sentence is more formal than the first one. The first one is like a child's writing or an oral sentence. Maybe my writing is like that. The second one is like a written sentence. Don't you think so?

SF2: Anything more?

SM1, SF2, SF3, SF1 and SM2: Ok. That's all.

From the above observation, the researcher finds that the students' were not passive but rather very active in learning. They were thinking, exploring and encouraging each other to participate. They were also full of enthusiasm and showed interests in their learning trying to find out as much as they could. The researcher is happy to see that they were close to finishing their task

satisfactorily even though they had not learnt the subject of lexical density. They found differences in the sentence structure, words and expressions and they could distinguish the formal and informal expressions (child's writing, oral sentence). Some of the students' expressions impressed the researcher. These are: (1), "you are too great", which gives the other student a positive encouragement; (2) questions like "have you noticed?" and "can you guess?" which encourage brainstorming; and (3) expressions like "don't you think so?" to solicit agreement. The students' classroom learning was active and interactive.

- ***Classroom observation on nominalisation (Unit 4, Section 5, Teaching Step 3)***

This was the second nominalisation lesson of Unit 4 for the advanced level students. In Section 5, the teaching was focused on nominalisation. Classroom Observation Note 3 shows a short section of question time in class after Teaching Step 2, which was about producing a nominalised structure. After the lesson, the teacher gave the students two minutes and let them ask questions on what they were still not sure or could not understand related to what they had learnt.

Teacher's words: We will have a two-minute break before we start the next part. Please feel free to ask questions related to what we have learnt just now.

Classroom Observation Note 3: A male student asked a question and then a female student. They were coded as SM and SF and the teacher was coded as T.

SM: I have a question. Just now you talked about that the subject of the clause often takes a genitive (possessive) case when it is transformed into a nominalised structure. Do you think I am correct to say "the crawl of it like a worm" if the original clause is "it crawls like a worm"?

T: I think you'd better say "its worm-like crawl", because you are asked to change the subject into its possessive case according to the nominalisation structure. The possessive case of "it" is "its" and you should change "like a worm" into "worm-like". The word "crawl" has got the same spelling in its noun and verb forms. So the nominalised structure should be "its worm-like crawl". Do you think so?

SM: Yes, I see.

T: Any more questions?

SF: I have a question. There is this sentence in our exercise, "She made him paint the wall" And we are asked to nominalise the sentence. I think there are two possibilities: (1) her making him paint the wall, and (2) his being made to paint the wall.

T: Yes, these are possible. The first one is definitely correct. Let's look at the second one. In my opinion, the second one is also correct. It depends on what syntactic structure you choose. However, in the second clause, the actor, that is the person who does the action, is not clear. Am I clear?

Based on the Classroom Observation Note 3 on the questions the students asked in class, the researcher finds that the students not only could involve in the SFL learning situation, but could also try to learn more and to explore further information about nominalised structure (Question 2). This reveals that developing the English writing skills of Chinese students' by using SFL is very acceptable to Chinese students.

- ***Classroom observation on grammatical metaphor (Unit 5, Section 5, Teaching Step 2)***

This was the last grammatical metaphor lesson of Unit 5 for the advanced level students. In Section 5, the teaching was focused on interpersonal metaphor. Classroom Observation Note 4 shows a group discussion of Teaching Step 2. The teacher asked the students to work in groups and write different expressions of grammatical metaphor of modality and mood to strengthen what the students had learnt in class.

Teacher's instructions: (1) Please use the idea of grammatical metaphor of modality to express in different ways the likelihood of the event in the following sentence: "my brother has gone abroad". (2) Please write the alternatives of the following sentence: "My brother came back from work" and show the different interactive statuses of each alternative mood.

Classroom Observation Note 4: There were five students in this group and they were all girls. They were coded as S1, S2, S3, S4 and S5.

S1: Shall we recall what we have learnt about the expressions of grammatical metaphor of modality?

S2: "I think", "it is very likely that..." and ...

S3: Maybe "everyone believes..."

S4: "It is clear that..."

S5: So the possible expressions for the first sentence are:

S1, S2, S3, S4 and S5: I think my brother has gone abroad.

It is very likely that my brother has gone abroad.

Everyone believes that my brother has gone abroad.

It is clear that my brother has gone abroad.

S1: *More? No?*

S2: *We have to do the second one.*

S3: *What does the word "mood" mean?*

S4: *I don't know. Let me have a look at my notes. ... I'll read it to you.*
"Mood expressed the speech functions of statement, question, offer and command." (Halliday, 1994a, p. 63)

S5: *I see. We use declarative sentences to express statements, interrogative to express questions, imperative to express commands and we can use different ways to express offering, such as "Shall we..?".*

S1: *Quick, quick. Declarative sentence first.*

S2: *We've already got the declarative one. It is the original sentence.*

S1: *Oh, sorry. Let's try an interrogative mood. One special question and one general question.*

S3: *"Where did your brother come back from? Did your brother come back from work?"*

S4: *Excellent!*

S1: *Next, command mood. "Come back from work".*

S4: Great! I'll try the offer mood. "Could you please come back from work?"

S1, S2, S3, S4 and S5: Well done!

From the Classroom Observation Note 4, the researcher finds that this group of students not only participated actively in the group activity, but also tried to ask for information and used resources to find the information they needed. In addition, they developed their knowledge and each of them gave further information or supplementary information. Furthermore, they purposefully brainstormed to fulfil the tasks, helped each other and at the same time shared information. This reveals that the students were engaged in the classroom SFL learning environment.

6.5. Summary

In this chapter, both qualitative and quantitative methods are employed to analyse the questionnaire data, informal interview and classroom observation data. The results have provided that teaching SFL is necessary for developing English writing skills of Chinese students. The results of the questionnaire data analysis show that the students have good general understanding of SFL and most of its grammatical features. However, in regard to the applications of certain grammatical features in writing, such as writing lexically dense sentences, using nominalisation in writing, obvious difficulties can be seen from their responses. In terms of students' attitudes towards grammatical features application, very positive answers were given to the understanding of Theme, thematic progressions in writing and application of grammatical metaphor. According to the informal interview data, the teachers' views reveal that the students' writing was far from being satisfactory. However, the teachers interviewed knew clearly about the weaknesses in teaching and some teaching implications were suggested. From the students' reflection and feedback, it is encouraging that most of the students had SFL in mind and tried

to use its grammatical features in their writing though difficulties and problems still exist. Regarding classroom observation, the data analysis results show that the students were actively involved in the SFL classroom activities. They were thinking hard, encouraging each other, sharing information, brainstorming and working together in class. These behaviours reveal their strong interests in learning SFL. Therefore, it is worth having a detailed analysis on the findings in the next chapter to explore the implications for English teaching in the future.

CHAPTER 7. CONCLUSION

7.1. Introduction

This is the last chapter of the thesis which gives the researcher the opportunity to reflect on the whole process from the beginning to the end of the research journey. Fundamentally a conclusion chapter is the time researchers should re-examine the general development of the study and some major aspects and issues in terms of self-reflection. Thus, in this last chapter, the researcher focuses her discussion in a reflective way on the research journey of this study in relation to the decision made to conduct the research, the aims and objectives as they evolved, the theories used to support her research, the methodologies chosen to fulfil the objectives, data collected, the findings and contribution achieved, problems in the teaching and learning process, as well as limitations and significance of the study. It is important to examine the implications of this study in relation to the application of the four grammatical features on developing writing skills, especially how they should be used in teaching students in universities in general and in China in particular as well as the new directions for future research. As the chapter is a personal reflection on the research journey, there will be a switch from the use of “the researcher” to the pronoun “I” hereafter to make the reflection more experientially meaningful.

7.1.1. Reflection of the journey of the research

I am nearing the end of my journey of this thesis. I suddenly feel that I have so much to tell when recalling the research journey I have been through. As a beginning researcher, my journey is full of hardship, pain and happiness. The hardship comes from the lack of knowledge of SFL theory, research awareness

and research experience. I could deeply appreciate the Chinese saying: “one will realise that one has not read enough only when one needs to apply the knowledge”. The pain comes from the neglect of my duty to my family and the difficulties met in the research process. The happiness comes from the achievements made during the research process. This journey is also a test of my will to pursue a pathway of an academic life. Thus, this journey has been a process of self challenge from the beginning to the end of the research.

7.1.1.1. A personal perspective

This research is not only a realisation of my personal interest in SFL as a linguistics student but also a motivation of my desire as a teacher to help Chinese students develop their writing competence in English. This motivation arose from my personal learning and teaching experience from traditional teaching methods to acceptance and understanding of new linguistics theories and language teaching methods. This research is a personal developmental process of learning and understanding of SFL and an attempt to translate SFL theory into practice in the Chinese educational context. It is a process of continuous exploration and development of new ideas in teaching and research.

7.1.1.2. SFL theory into the research

As have been comprehensively discussed in the literature review chapter of this thesis, Systemic Functional Linguistics (SFL) developed by Halliday is a theory concerned with language function and semantics from the basis of human language and communicative activities in certain social context, what language does and how it functions in different social contexts. It looks at how language both acts upon and is constrained and influenced by social context. According to Halliday (1978), language is not a system of rule, and it should cover “language as behaviour”, “language as knowledge” and “language as art”.

One can hardly take literature seriously without taking language seriously and there can be no man without language, and no language without social man. This stresses the relationship between language and literature, language and human, and language and social being. With regard to Halliday's points of view, we should take language beyond a consideration solely of language as a system.

SFL regards language as a resource for making meaning considering the context in the construal of discourse. Taken in this sense, various studies in relation to SFL have created a number of research trends, such as computational linguistics, artificial intelligence, educational linguistics, administrative linguistics, marketing linguistics and clinical linguistics. Taking educational linguistics as an example, studies on SFL and English literacy in terms of genre/register and discourse as well as SFL and TESOL and LOTE have been popular for many years (Christie, 2005; Christie & Martin, 2006; Halliday, 1975; Hasan & Martin, 1989; Hasan & Perrett, 1994; Martin, 1992; Perrett, 2000; Unsworth, 1993a, 1993b, 1997, 2000a, 2000b; Unsworth, Astorga, & Paul, 2002). The four SFL grammatical features, Theme and Rheme, lexical density, nominalisation and grammatical metaphor have proved to be effective in developing writing skills. Theme and Rheme analysis of texts is a discourse-semantic tool for organising discourse. Lexical density as a measure of density of information distinguishes spoken and written discourse and it is characteristic of scientific writing. Treated as a form of using nominal form to express a process meaning, nominalisation produces very lexically dense prose for creating grammatical metaphor which probably "evolved first in scientific and technical registers" (Halliday & Matthiessen, 2004). Grammatical metaphor, as one of the most relevant grammatical features, expresses meaning transference from congruent to metaphorical, indexing academic writing and scientific writing. Therefore, developing awareness of the four SFL grammatical features in writing is very important for learners of foreign languages.

7.1.1.3. Reflection on the research objectives

This research study involved developing Chinese tertiary students' English writing skills through the teaching of Systemic Functional Linguistics grammatical features. My initial research methodologies employed in this research study were quasi-experimental research and questionnaire survey methods. According to quasi-experimental research method, the participants were divided into controlled and experimental groups of three levels: the elementary, intermediate and advanced levels. Data were collected from the students' pre-teaching and post-teaching writing exercises. The questionnaires dealt with the problems of the suitability of SFL in teach English writing to Chinese students; the students' understanding, views and attitudes towards the effectiveness of SFL in enhancing their writing skills; and the application of the four SFL grammatical features. The SPSS statistical tool was used to analyse the quasi-experimental and questionnaire data, comparing the statistical results of the two groups at the three levels to identify the differences in the students' writing before and after the teaching of SFL grammatical features, and to examine the students' general understanding of SFL and their views on SFL learning. However, in dealing with reality when the research was under way, a few questions emerged. I began to question the real purpose of the research and the methods used. The questions were:

- How do I examine students' difficulties and problems in using the four grammatical features in the process of teaching and learning?
- What are the students' views on learning SFL and their application?
- What are the teachers' views on teaching English writing to Chinese students?
- Are students interested in learning SFL?
- What are the effectiveness and pedagogical implications of using the four SFL grammatical features in teaching Chinese students English writing?

With these questions in mind, I gradually refined my research objectives:

1. To examine the suitability of Systemic Functional Linguistics in teaching English writing to Chinese students. Two research aspects are the focus of this objective: (1) the students' understanding and application of SFL and its four grammatical features; and (2) the students' participation in the classroom activities of SFL learning.
2. To identify the differences in the students' writing before and after they were taught the four grammatical features of SFL.
3. To examine the difficulties and problems in using the four grammatical features in the process of teaching and learning.
4. To investigate the students' views on learning SFL and their application.
5. To identify the effectiveness and some pedagogical implications of using the four SFL grammatical features in teaching Chinese students English writing.
6. To investigate the teachers' views on teaching English writing to Chinese students.

Thus, I decided to rethink and further develop my research in order to accommodate the dynamic nature of the research and my own development as a researcher. As can be seen from the clarification of the research objectives, it represents a constructive process from the unknown world to a known one.

7.1.1.4. Reflection on the combination of quantitative and qualitative research

Research aims and objectives gave me a focus on what I wanted to do in my study. However, methodology was my next concern as without an appropriate methodology, my study objectives could not be achieved. With the questions discussed above, I thought that the quantitative quasi-experimental research method and the standardised questionnaire used to gather data were rather inadequate in seeking answers to those questions

After rethinking and redesign, the methodologies were expanded to include quasi-experimental research, questionnaire surveys, interviews, classroom observation and analysis of the students' exercises. A combination of different methods can open different windows in the research process and offer insights from different research method perspectives. There are three broad reasons to combine quantitative and qualitative research (Rossman & Wilson, 1984, 1991): (1) to enable confirmation or corroboration of each other via triangulation; (2) to elaborate or develop analysis, providing richer detail; and (3) to initiate new lines of thinking through attention to surprises or paradoxes, "turning ideas around" and providing fresh insight. Different methods can be used for different purposes in a study (Saunders, Lewis, & Thornhill, 1997). Using a variety of techniques may provide different perspectives on the situation (G. D. Bouma, 2000). Patton (1990, p. 187) mentions that one important way to strengthen a study design is through triangulation, or the combination of methodologies in the study of the same phenomena or programs. In my opinion, good research should be a crystallisation of the collective wisdom of both quantitative and qualitative research approaches. In this research study, apart from using the numeric data to illustrate the quantitative information, qualitative data is also necessary for gathering information from the teachers' and students' perspectives. This study also involved the teaching process which is also one of the characteristics of

qualitative action research. Therefore choosing the approaches which are best suited to the objectives of the study is an important initial stage in research. In my study, without the qualitative research, it would have been difficult or impossible to find answers to the questions of examining the students' difficulties and problems in using the four grammatical features in the process of teaching and learning. Without the teaching sessions, it would have been impossible to meaningfully obtain students' views on learning SFL and their application and the teachers' views on teaching English writing to Chinese students. The students' interest in learning SFL grammatical features could not have been observed. It would have hindered my quest for identifying pedagogical implications on using the four SFL grammatical features in teaching English writing to Chinese students in future teaching.

My data analysis also employed both qualitative and quantitative methods to examine task-based and non-task-based data. Tasked-based data analyses covered the pre-teaching and post-teaching writing exercises of both controlled and experimental groups at all three levels and the students' exercises data. The non-task-based data analyses focused on the teachers and students' informal interviews, questionnaires and classroom observation data.

In summary, the use of a combination of quantitative and qualitative approaches in this study was a good choice in terms of data collection, data analysis, and research findings.

7.1.1.5. Reflection on conducting qualitative research in China

When I was undertaking my research, I gradually found out that conducting qualitative research in China needs to be handled with great care. Different from other countries, China is a nation with a big population, long history, different culture and a unique political system. China has also experienced different political movements such as anti-right-deviationist movement and the

Cultural Revolution. Though after the “Open Door Policy” the Chinese people’s ideas and attitudes have changed a great deal, Chinese society is still strongly influenced by Confucianism and traditional values. Confucianism is a complex system of moral, social, political and religious influences from the beginning of Chinese civilisation up to the 21st century. For example, in Confucianism, the term “ritual” means politeness which colours every day life. Young people are expected to show politeness to older people and children are expected to obey their parents. Juniors are considered to owe strong duties of reverence and service to their seniors and meanwhile seniors also have duties and benevolence and concern towards juniors. Therefore, conducting qualitative research in Chinese context has to take moral, social, cultural, political, and religious factors into account.

- *Interviews of students and teachers*

In the Chinese context, students would not want to show the others their shortcomings or weaknesses compared to Western students because they normally compete with one another especially in a group interview. For example, the students seldom say that they cannot do or fail to do something to disclose their weaknesses. According to Confucianism, teachers should be respected as they are the students’ seniors. Chinese students are hesitant to speak their minds because they do not often make criticisms, comments or suggestions to their teachers, since they thought this may cause embarrassment to the teachers or may be impolite to the teachers. Thus, the interview in this study required some adjustment on the part of the researcher to ensure that the students were comfortable with the teacher and amongst themselves. In order to protect the students’ privacy, I used codes in the data analysis to represent each student. I also tried to maintain confidentiality especially of their comments on the teachers’ teaching and their personal ideas to the questions. I also used inviting questions such as “could you please let us know...”, “do you

mind telling ...” or put the students in another position and asked “if you were the teacher, how do you/what do you...?”. As a result, the students felt more comfortable to express their evaluative ideas about the teachers’ teaching and their learning difficulties.

The teachers’ interview was conducted in group. When I was conducting the teachers’ interview, I had to be extra careful in dealing with individual teachers because Chinese intellectuals pay great attention to their “face”. All teachers interviewed seemed to have endless comments on what they had experienced in real life teaching situation about their students writing problems; and different reasons why the students had such problems. It was very hard for me to stop them without causing them to lose “face”. As a researcher in this situation, I had to moderate the discussion so that each teacher would have a fair chance to speak. Thus, techniques had to be employed to stop the first speaker without making him/her feel that I was impolite. I tried to summarise the points of the first speaker and prompt the second speaker to supplement his/her ideas. I also tried to ask each individual to express their ideas on the same questions.

- *Cultural politeness in interview*

In the Chinese culture, politeness is socially more important than getting the truth. China is a collective society in which a community or group is seen as having greater meaning or value than the individuals that make up that society. Collectivism stresses human interdependence and the importance of a collective culture. Thus interviews need to be conducted carefully in China so that it is culturally appropriate and can also aim for authentic information. It is a challenge for some researchers. In comparison to quantitative research, qualitative research is more open and flexible or less structured. Qualitative research encourages the researcher to take interactive activities to find “reality”

and gain an in depth understanding of the experience of particular individuals or groups. Thus, cultural factors should be considered. There is an old Chinese saying similar to “one never airs one’s dirty linen in public”. Under the traditional or social pressure, people would not disclose sensitive personal information such as being a single mother or a homosexual, having committed crimes, having family problems or suicidal tendency. Traditionally, Chinese people look at these issues as a “shame” in the family which they are unwilling to share with the others. It is offensive for the researcher to touch upon these issues in the interviews without cultural consideration.

- ***Politics consideration in the interviews***

Conducting qualitative research in Chinese universities needs to take the political context into consideration also. It is important not to discuss sensitive topics which may offend the authority, particularly on policy evaluation which may be seen as an attack on the authority. For many years, universities in China have been regarded as places for intellectuals of radical thoughts and political inspiration. Both the May Fourth Movement and the 1989 Tiananmen Square Incident were led by students and intellectuals from Chinese universities. It is important for a researcher to be aware of possible political interference when conducting research in a Chinese context. Researchers should avoid asking very sensitive questions and discussing sensitive topics such as international disputes, attitudes towards certain government services, or government policies. Though my research study deals with language and educational issues which is less sensitive than political topics, I have to be aware of any possible misinterpretation or misuse of my findings, which may be seen as a challenge to the authority at local and national levels.

7.1.1.6. Attitudes of Chinese scholars towards qualitative research

Chinese scholars are not quite comfortable with qualitative research as it is seen as “weak” and too subjective. It needs a paradigm shift for the conventional researchers and educators. Chinese people pay great attention to evidence-based research and in their views evidence-based research using quantitative methodology has greater authority and respect than qualitative research. Thus, scholars in China prefer quantitative research to qualitative research, on the grounds that it can show the statistical result systematically and objectively. Some Chinese scholars also hold the views that qualitative research is “weak” and it hardly reflects reality, and qualitative research is too subjective to provide practical solutions to problems.

In conducting this research using both quantitative and qualitative methodology, I realise that qualitative research can provide deep insights which may help strengthen and revise a theory. Quantitative data shed light on a trend or a phenomenon but not the reasons behind. Qualitative research can find out more details about the phenomenon and render the analysis more reliable on the grounds that quantitative findings normally are not comprehensive enough in result interpretation. However, conducting qualitative research in Chinese context has its own cultural characteristics and problems. As mentioned above, qualitative research as a research tool may not be accepted by its target subjects if the researcher does not take the Chinese context into consideration. Therefore, conducting qualitative research in China can be very challenging. What qualitative researchers should consider is not only the qualitative methodologies and studies but also the social, political and cultural factors.

7.2. Findings and implications of the study

As fully presented in the data analysis and results chapters, this study has some implications on the teaching of the four SFL grammatical features in developing the writing skills of Chinese learners of English.

According to the findings from comparing the task-based data of the pre-teaching and post-teaching writing exercises, the students' SFL exercises and the non-task-based data of questionnaires, the teachers and students' interviews and classroom observation, the teaching of the four grammatical features of SFL proves to be feasible and effective in developing the students' writing competence. This is also supported by the review of the literature in relation to the acceptability of SFL both in theory and in application. Moreover, the literature review also reveals that SFL research has been accepted in many areas especially in Australia and it has been used in education and language teaching for many years. However, in China, few studies have been conducted on a wider application of SFL in teaching for the purpose of developing students' language competence, apart from the SFL theoretical courses offered to the MA and PhD students majoring in English Language Literature at a few top universities in China. Thus, this study is significant in the sense that it is the first attempt in SFL action research to teach SFL and its grammatical features to tertiary students in China aiming to develop their English writing skills.

7.2.1. Differences in writing between pre-teaching and post-teaching of the four grammatical features of SFL and implications

In regard to Research Objective 2 about identifying the differences in writing between pre-teaching and post-teaching of the four grammatical features of SFL, the findings in the order of Theme and Rheme, lexical density,

nominalisation and grammatical metaphor were presented in Chapter 5. The implications were provided after the findings of each grammatical feature.

7.2.1.1. Findings from the Theme and Rheme pre-teaching and post-teaching data analysis and implications

In relation to the grammatical feature of Theme and Rheme, this study has reviewed a large group of literature to discuss the definition of Theme, the textual metafunction of language, the system of Theme and the thematic development of texts (Bloor & Bloor, 2004; Butt, Fahey, Spinks, & Yallop, 1997; Halliday, 1985b, 1994a; Hasan & Fries, 1995; Martin, Matthiessen, & Painter, 1997; Tannen, 1984; Thompson, 1996; Unsworth, 1993a; G. Williams, 1994). On the subjects of the teaching of writing, text analysis and children's literacy development, the review of the literature also presented a great number of studies (Belmonte & McCabe-Hidalgo, 1998; Christie, 1989; Danes, 1974; Downing, 2001; Fries, 1981, 1992, 1994, 1995a, 1995b, 2002; Leonard & Hukari, 2005; Martin, 1992, 1995; Unsworth, Astorga, & Paul, 2002; L. Wang, 2007). In regard to findings from the Theme and Rheme pre-teaching and the post-teaching data analysis, developing an awareness of Theme and Rheme among the students and the teaching of thematic progression patterns are very important. According the analysis results, the writing of the experimental group students at all three levels improved greatly after they were taught thematic progression patterns. Specifically, the students were aware of using thematic progression patterns in their writing and they realised the connection between Theme and Rheme by placing elements from the Rheme of one clause into the Theme of the other, or by repeating meaning from the Theme of one clause in the Theme of the subsequent clauses. Thus, their writing was more coherent and logical and more students employed different thematic progression patterns rather than just a parallel progression pattern. To a certain extent, the students also tried to control the thematic development of the text which helped them

make choices about the various modes of text development. On the contrary, the control group students at all three levels had less awareness of employing various thematic progression patterns. The range of thematic progression patterns they used was comparatively narrow with most employing parallel patterns and unexpected thematic progression patterns. Thus, their writing was not coherent and logical and they had no awareness of making choices about the various modes of text development.

Leonard and Hukari (2005) mention that in the development of students' writing, Theme and Rheme can be key in maintaining coherence in textual organisation. According to Leonard and Hukari and the other studies as well as this particular study, teaching Theme and Rheme grammatical feature and the thematic progression patterns is necessary and important to foreign language learners. Teaching these features helps develop an awareness of different text organisation and improve university students' cohesion in writing academic texts.

7.2.1.2. Findings from the lexical density pre-teaching and post-teaching data analysis and implications

Written English tends to be lexically dense. Halliday (1985) analysed the functions of written English and points out that it is not simply "spoken language written down". According to Halliday and Martin (1993), lexical density is a measure of the density of information in any passage of text, according to how tightly the lexical items (content words) have been packed into the grammatical structure. Lexical density can be measured (Eggins, 1994; Halliday & Martin, 1993; Ure, 1971) and it differentiates between types of spoken or written discourse (Halliday, 1985c; Stubbs, 1986; Ure, 1971). Apart from the grammatical features analysis, the literature review revealed that studies on lexical density in different types of writing such as expository (Loo,

2003), email writing (Shang, 2007), interview and conversation (Zora & Johns-Lewis, 1989) are mostly limited to written text analysis rather than developing students' awareness of writing lexically dense clauses or texts which are the characteristics of written English, academic and scientific writing. From the data analysis results in Chapter 5, the most important finding from lexical density pre-teaching and post-teaching comparison is that after teaching, the writing of the experimental group students at all three levels was different from their pre-teaching writing. Their writing was more lexically dense and the students had an awareness of using more content words to pack in more information in their writing. The lexical density in the post-teaching writing was much higher than that of the pre-teaching writing.

In terms of pedagogical implications, both teachers and students should be aware of the feature of lexical density, such as content words, and nominalisation which are the crucial tools to improve lexical density. As foreign language learners, it is very hard to acquire this feature naturally. Teaching this feature is necessary because it not only improves teachers' procedural knowledge of the feature of the writing phenomenon but also helps students develop awareness of the differences between spoken English and written English, academic writing and scientific writing. Teaching lexical density also helps students know how lexical density in the clauses is formed and develop skills of measuring the lexical density in their own clauses and writing.

7.2.1.3. Findings from the pre-teaching and post-teaching nominalisation data analysis and implications

Nominalisation is widely used in academic writing and scientific writing. It helps to create a style of writing with density, complexity and abstract. Nominalisation is the use of a nominal form to express a process meaning

(Thompson, 1996). Nominalisation is known as “the single most powerful resource for creating grammatical metaphor” (Halliday & Matthiessen, 2004). As covered in the literature review, a large number of studies have been conducted on the grammatical feature of nominalisation which uses nominal form to express process meaning, functions of nominalisation, nominalised structures as well as nominalisation and grammatical metaphor (Givón, 1993; Halliday, 1998a; Halliday & Matthiessen, 2004; Halliday & Matthiessen, 1999; Lees, 1960; Quirk, Greenbaum, Leech, & Svartvik, 1985; Smith, 1991; Thompson, 1996; Vande Kopple, 1991). A review of the literature on the studies of developing nominalisation awareness among students reveals that nominalisation can be used to develop the skills in academic writing (Givón, 1993; Hinkel, 2002b; J. Williams, 1986). According to the comparison results of the post-teaching writing exercises between the experimental and control groups, the experimental groups at all levels used more nominalisations and nominalised structures in their writing. The findings from the comparison results between the experimental and control groups after the teaching of SFL grammatical feature of nominalisation are that the experimental group students’ post-teaching writing demonstrated a higher awareness of using nominalisation and nominalised structures and this writing was more formal and academic in style.

The pedagogical implications are summarised based on both the literature review and the findings from the nominalisation data analysis results. Teachers tend to judge essays using a lot of nominalisations as more sophisticated and rate them more positively than those that employ a reader-friendly verbal style. The phenomenon presents an interesting dilemma for writing teachers in that if students heed their perspective advice and write in a verbal style, their essays gain clarity, but their marks suffer (J. Williams, 1986). In other words, students are discouraged from writing nominalised and sophisticated clauses in their essays. The literature review also shows that there are few studies on the teaching of nominalisation to develop students’ writing skills. In the light of

the findings from the statistical data analysis results, the students employed more nominalisation and nominalised structures in their writing after having learnt the grammatical feature of nominalisation. Thus the pedagogical implication is that the descriptive analysis of the grammatical feature of nominalisation is not adequate to develop students' awareness of using this feature in their writing. Teaching the nominalised structure and developing students' skills of using this feature in their writing are essential.

7.2.1.4. Findings from the grammatical metaphor pre-teaching and post-teaching data analysis and implications

Grammatical metaphor is a term used by Halliday to refer to meaning transference in grammar. Instead of the congruent realisation of a norm, the metaphorical representation has become the norm in many instances. Metaphorical modes of expression are characteristic of all adult discourse (Halliday, 1994a). The shift from congruent to metaphorical modes of expression is also the characteristics of written English. In regard to grammatical metaphor, this study has reviewed a large body of literature in Chapter 2 presenting a descriptive account of the definition of grammatical metaphor, the forms, historical development of grammatical metaphor, its application, characteristics, grammatical metaphor in scientific writing and second/foreign language teaching and learning, and children's acquisition (Bloor & Bloor, 1995; Derewianka, 2003; Eggins, 1994; Halliday, 1985b, 1988, 1994a, 1998b; Halliday & Martin, 1993; Halliday & Matthiessen, 1999; Heyvaert, 2003; Hita, 2003; Lester, 1971; Matthiessen, 1995a; Painter, 2003; Ravelli, 1988; Simon-Vandenberg, Taverniers, & Ravelli, 2003; Taverniers, 2003; Thompson, 1996; Torr & Simpson, 2003; Veel, 1997). The literature review of grammatical metaphor also examined a few theoretical explorations of grammatical metaphor (Lassen, 2003; Simon-Vandenberg, Taverniers, & Ravelli, 2003; Thompson, 2003). Some challenges of grammatical metaphor

were examined in the literature review, such as analogy of grammatical metaphor to phonological metaphor, the relationship between metaphor and semiosis, the nature of language, different trends in linguistics, the comparison between SFL and cognitivism as well as valuable contribution to the advance of the research in grammatical metaphor (Goethals, 2003; Holme, 2003; O'Halloran, 2003b; Simon-Vandenberg, Taverniers, & Ravelli, 2003; Veltman, 2003). In regard to the literature review of teaching grammatical metaphor, studies are mostly related to scientific writing (Banks, 2002, 2003; Derewianka, 2003; Lemke, 2001; Martin & Veel, 1998; Norris & Phillips, 2003; Painter, 2003; Ravelli, 2003). As far as the literature review of grammatical metaphor is concerned, teaching grammatical metaphor and developing students' awareness of using grammatical metaphor in their academic writing should be taken into consideration. The statistical findings from comparing the use of grammatical metaphors in the post-teaching writing exercises between the experimental and control groups at all three levels show that after having learnt grammatical metaphor, the experimental group students at all three levels had an awareness of employing grammatical metaphor of transitivity in their post-teaching writing, which refers to the use of a verb or an adjective as a noun. Whilst, the control group students at all three levels had little awareness of using this feature in their post-teaching writing.

In accordance with the literature review of grammatical metaphor and the comparison findings from the grammatical metaphor statistical data analysis results of the students' writing exercises, various grammatical metaphor studies have been conducted. Teaching grammatical metaphor is useful in developing the English writing skills of Chinese students.

7.2.2. Difficulties and problems in using the four grammatical features in teaching and learning

With reference to Research Objective 3, this study provides evidence of the difficulties and problems the students faced when applying the four grammatical features through the examination of the students' exercises during the teaching and learning process. Piaget (1950) mentions that knowledge is internalised by learners through processes of accommodation and assimilation and individuals construct new knowledge from their experiences. Students learn both from their teachers and their own learning experiences, and thus the examination of the students' exercises is a way of examining how the students' knowledge is accommodated and assimilated. Findings from the students' exercises were reviewed in the order of Theme and Rheme, lexical density, nominalisation and grammatical metaphor below.

7.2.2.1. Findings from the data analysis of the students' Theme and Rheme exercises and implications

According to the Theme and Rheme data analysis results of the students' exercises in Chapter 5, several findings are presented as follows:

1. The students had problems recognising longer Themes when the Theme embeds a *wh*- clause. For example, in *what he ate that night*, the students took *what he ate* as the Theme rather than *what he ate that night*. Moreover, some of them thought that the Theme was *what*.
2. The students had problems recognising "non-subject marked topical" Themes which are important in structuring the larger discourse. The students were confused about the idea of "textual Theme + topical Theme". Examples are *and then we'll go out* and *last night a man was helping*

police inquires. In the first clause, *and then* is a textual Theme and *we* is the topical Theme. However, in the second clause, the topical Theme is *last night*.

3. The students had problems employing thematic progression patterns which show how information is sent in texts. The reason is that the students wrongly identified the Theme and Rheme and, as a result, they could not find the logical connection with the Theme or Rheme in previous sentences. This problem is caused by failing to recognise the right textual and topical Themes and multiple Themes.
4. The students lacked a comprehensive awareness of using thematic progression patterns in their writing.

In regard to the above data analysis findings from the students' exercises of Theme and Rheme, developing students' awareness of using this feature in their writing is not adequate for their application. Teachers should help students relate grammatical structure to ways in which they mean when they use language in context. It is worth looking closely at the structure of groups as well as structure of clauses which form Theme. Looking at the distribution of Themes to understand how text flow is controlled by paragraphing is also very important because each paragraph is organised around related "topical" Themes. Illustrating variations in thematic patterning between genres by teaching explicitly the thematic structure of writing in various genres is crucial for Chinese learners of English.

7.2.2.2. Findings from the data analysis of the students' of lexical density exercises and implications

According to the findings from the data analysis of the students' lexical density exercises in Chapter 5, the following are identified:

1. The students had problems identifying some “adverbs” as they were not sure whether these words were content/lexical or functional/grammatical words because in some clauses, the meanings of these words were not clearly indicated. Examples are *I work here* and *this is the education building and he works here*. In the first clause, the meaning of word *here* is not clearly indicated. However, in the second compound clause, *here* clearly refers to the education building. In the first clause, *here* does not reveal much information.
2. The students had problems identifying some “verbs”, “verb phrases” and “auxiliary verbs. Examples are *I am going to Beijing* and *we are going to build a new house*. In the first clause, *be going to* are content words which contain the meaning *go*. However, in the second clause, the phrase *be going to* is functional as it indicates time.
3. It was not hard to develop the students’ awareness of lexical density. After learning lexical density and how to identify content words, most of them could distinguish spoken and written English according to the lexical density formula.
4. According to the statistical analysis results, the experimental group students at all three levels could write simple clauses with lexical density (50%) higher than 42% which is the level distinguishing written and spoken English. However, it was very hard for them to write texts or essays with high lexical density as shown in their pre-teaching and post-teaching data comparisons.

As to pedagogical implications, teachers of English must have solid knowledge in the area of linguistics and academic writing competence so that they have the ability to deal with different problems arising during the process of teaching and learning. Teachers of English should focus their attention on both

the general features and the specific ones. Teachers of English must also be well aware that teaching is a process involving planning, teaching, feedback, revising, and re-planning and it is a continuous improvement process. Thus during the process of writing development, more exercises are needed for students so that teachers can identify students' weaknesses.

7.2.2.3. Findings from the data analysis of the students' nominalisation exercises and implications

A summary of the findings from the students' nominalisation exercises is given below.

1. The students had problems identifying the active verbs when combining clauses using nominalisation. An example is *crime was increasing rapidly and the police were becoming concerned*. → *the rapid increase in crime was causing concern among the police*. When combining the clauses, the students had the following difficulties: (a) they wrongly identified the verb *become* and (b) they did not know the noun form of the verb *concern*.
2. The students had difficulties in switching from spoken English to written English. Firstly, they had difficulty in identifying the active verbs in clauses. Secondly, they could not use nominalised structure adjustment properly. It is challenging for foreign/second language learners to unpack the information encoded in the nominalisation and it is difficult for them to pack information by using nominalisation in their writing.

In terms of pedagogical implications, when teaching these features, teachers should identify problems and difficulties in students' learning. For example, students are confused with nominal morphology and they do not know that some of the verbs take nominal suffixes. Before teaching, teachers should help students understand the morphological change when turning a verb into its

nominal form. Teachers of English should also help students familiarise themselves with the nominalised forms of the verbs, then develop students' skills of using nominalised structure adjustment, and help them build cohesive extended arguments on complex and abstract subjective matter. At the same time they should develop students' awareness of nominalised terms in scientific writing as well as develop students ability of adjust their writing style according to the nature of the social exchange required.

7.2.2.4. Findings from the students' grammatical metaphor exercises and implications

According to the data analysis of the students' grammatical metaphor exercises in Chapter 5, brief findings are given below.

1. Most students could identify the congruent and metaphorical forms in a clause. However, some of them still mixed up the two forms because both the metaphorical and congruent forms are so frequently used in daily life and these metaphorical representations have become the norms. For example, *I think he is right* is an interpersonal metaphor. The students had difficulties identifying the problem as it is generally recognised as a metaphorical form. Though interpersonal metaphor concerns mostly spoken English, it is necessary to emphasise in teaching that knowing the features of spoken English helps understand the characteristics of written English.
2. The identification and structure application of nominalisation and grammatical metaphor were specific. When the students were required to translate three Chinese sentences into English applying nominalisation or grammatical metaphor where necessary, according to the statistical analysis results, their application of grammatical metaphor and

nominalisation in the sentence translation was unsatisfactory. The reasons are summarised as follows:

- In translation, it was hard for the students to find the main active verbs in the clause.
- The students encountered difficulty with nominalised forms of the verbs.
- Translation requires good language ability.
- The students were weak in application of the features.

From the teaching of grammatical metaphor and the analysis of the students' exercises, the following pedagogical implications can be derived for developing an awareness of grammatical metaphor in the English writing of Chinese tertiary students.

- Developing students' awareness of the characteristics of written English, academic writing and scientific writing is important and necessary. Teaching nominalisation and grammatical metaphor is necessary for developing the English writing skills of Chinese tertiary students.
- Translation has a role in teaching grammatical metaphor. Translation requires students to possess high language ability.
- Nominalisation is the resource of grammatical metaphor. When teaching grammatical metaphor, it is important to help students understand the conceptual relationship between these two features.
- Metaphor of transitivity makes writing more vivid and contrived. However, the terms of grammatical metaphor are abstract. For example, (a) Processes (actions, events, mental processes, relations) are expressed by verbs; (b) Participants (people, animal, concrete and abstract objects that take part in processes) are expressed by nouns; (c) Circumstances (time, place, manner,

cause, condition) are expressed by adverbs and by prepositional phrases; (4) Relations between one process and another are expressed by conjunctions.

Teachers should give well-selected examples to students to illustrate the analysis of different types of grammatical metaphors. Good examples of congruent and metaphorical forms of clauses are useful.

7.2.3. Findings from analysis of the students' questionnaires and implications

As mentioned in Research Objective 1-(1), questionnaire data is part of the non-task-based data. For the purpose of obtaining information from various sources to confirm the reliability and validity of the research, investigations into the students' general understanding of SFL and the application of SFL and its four grammatical features were conducted. The findings are summarised in two parts: (1) general understanding of the SFL; and (2) the students' attitudes towards SFL and the application of its four grammatical features.

7.2.3.1. Findings about the students' general understanding of SFL, their attitudes towards SFL and their application of these four grammatical features and implications

According to the statistical results of the questionnaires about the students' general understanding of SFL, the experimental groups at all three level had good awareness and general understanding of SFL. They could understand the basic concepts of what SFL is and explore the concepts and the functions of nominalisation and grammatical metaphor as well as the three metafunctions of SFL. When it comes to the understanding of the four grammatical features, the data analysis shows that the students had problems understanding the

metaphors of mood and transitivity as well as interpersonal and ideational metaphors.

In regard to the students' attitudes towards SFL and the application of its four grammatical features, the students had very positive views on Theme, the function of thematic progression in writing and the application of grammatical metaphor. However, their attitudes towards writing lexically dense clauses and application of nominalisation in writing were not positive.

As can be seen from the findings from the questionnaires, the students' attitudes towards general understanding of SFL and the four grammatical features were very positive. However, it was challenging for them to apply these features in their writing. Thus, apart from teaching students SFL knowledge, teachers should also develop students' abilities to explore how language develops its meaning and how these grammatical features are used to express the meaning in different genres and social contexts. As foreign language learners, students should not only be aware of the grammatical features used in different genres but also write as much as they could. They should also try to use these features as often as possible in their writing to reinforce what they have learnt and put what they have learnt into practice.

7.2.4. Findings from the data analysis of the informal interviews and implications

According to Research Objective 4 and 6, interviews were conducted to collect non-task-based data for the investigation of the teachers' views on teaching English writing to Chinese students as well as the students' views on learning SFL and their applications. As discussed in Chapter 6, the findings from the interview of the three teachers cover Chinese tertiary students' typical grammatical mistakes in writing, cohesion and coherence, cultural differences and English writing, spoken and written English, academic writing and current

problems in the teaching of English writing. The findings from the informal interview of the six students covering the students' reflections and views on the four SFL grammatical features are discussed in brief below.

7.2.4.1. Findings from the teachers' interview and implications

In regard to Research Objective 6, the teachers' views reflect the teaching of English writing in a Chinese context. It reflects not only the teachers' teaching, but also the students' learning. In a sense, it could also reflect the success and failure of teaching and learning.

- ***Typical grammatical mistakes***

The teachers' interview reveal that there were typical grammatical mistakes in the students' writing including some common mistakes of verb agreement, tense agreement, pronoun references and number agreement. The grammatical mistakes included also syntax and rhetoric problems as well as employment of the wrong words, sentence fragments and agreement between pronoun and antecedent. According to the teachers, 30% of the students made various grammatical mistakes in their writing which were attributed by the teachers to the differences between Chinese and English languages.

In terms of the implications on grammar teaching, teachers should devote more attention to lexical relations and meanings of individual words in context to help students determine appropriate grammatical choices. Many approaches to language teaching stress that grammar should be taught in the context of students' own written texts. Grammars which are of practical use in teaching have become available (G. Williams, 1993). Teachers should help students relate grammatical structure to ways in which people mean when they use

language in context. Grammar teaching should focus on actual use of language in real life.

- ***Cohesion and coherence***

With regard to the cohesion and coherence, the teachers interviewed shared their concerns. The students ignored the natural or reasonable connection between clauses and paragraphs. They also paid no attention to the logical and aesthetical relationship between parts and arguments in their writing. They lacked the awareness of the formation of the English language and how English expresses its meaning.

Teachers should help students find syntactic and lexical means to specify referents, indicate semantic and pragmatic connections between propositions, and give thematic cohesion to the discourse. Teachers should also help students understand the devices used to establish cohesion to show the relationships among the elements in the text. Developing students' awareness of coherence to organise the words and sentences into a structured, unified discourse is crucial. Therefore, it was not enough for teachers to only know the meaning of each word and the grammar structure by which the words are arranged in sentences.

- ***Cultural differences and English writing***

Findings from the teachers' interview in relation to cultural differences and English writing concerns mainly the mistakes made by the students in their writing due to differences in culture. Apart from the issue that there were no topic sentences and no examples supporting the topic sentences in the students' English writing, Chinese thought patterns were considered another serious problem caused by cultural differences.

In Chinese writing, it is common to avoid a direct delineation of thesis and topic sentences are not required. The topic sentences may appear anywhere in a paragraph and even at the end of a paragraph. However, English textual development is characterised by linearity which demands a very clear introduction, development and conclusion. As English language learners, it is important to learn how the native speakers of English express meaning through writing rather than writing English through Chinese mode of expression. Teachers should show students samples of English and Chinese writings for comparing the differences between the two writing styles. Teachers should also develop students' awareness and ability to create topic sentence to clearly state their main topic of the particular paragraph because topic sentence orients the readers and writers to what the paragraph will be about and it tends to predict the Themes of the sentences in the paragraph. In terms of these, teachers should develop students' awareness of thematic selection which decides the cohesion in a text. Therefore learning how to convey information effectively is also what students should know. Regarding conveying of selected information, developing students' awareness of Theme and Rheme concepts to control the flow of given and new information in managing the meanings in their writing is also important in the teaching of English writing.

- ***Spoken and written English, and academic writing***

In regard to spoken and written English and academic writing, the findings from the teachers' interview are that the students' writing was more spoken-oriented than written-oriented. Their writing was filled with loosely connected clauses, functional words, repetitions and had low lexical density. Their writing was also marked with fragmented sentences with just adverbial clauses or prepositional phrases. In addition to these, their writing was poorly planned and filled with colloquial words. The teachers' were not satisfied with their teaching which focused on the graduation papers of the students, such as

teaching different genres, helping students choose the topics of their papers, rather than developing students' writing abilities. Students knew the structure of academic writing but failed to apply it in writing.

From the findings from the teachers' interview above, to avoid the problem of "spoken English being written down", it is important for teachers to develop students' awareness of the differences between spoken and written English, and to develop their writing from teaching them the basic writing skills rather than "building a tall building without foundation".

Most importantly, the characteristic which differentiates spoken and written language is that written language displays a much higher ratio of lexical items to the total running words. In terms of the density of the information presented in language, written language is lexically dense, and spoken language is less dense in information. Thus, to improve students' written English, teachers should explain the generic distinction by comparing spoken and written language. They should also develop students' awareness of lexical density in written language and the ability of organising the information. In addition, teachers should develop students' academic writing competence in terms of attitudes and intellectual ability. Finally, ideas, evidence, research methods and organisation should also be included.

- ***Current problems in the teaching of English writing***

Apart from the problems mentioned above, the teachers interviewed expressed their additional views on the students' limitations in vocabularies as one of the current problems in the teaching of English writing. Students have been learning vocabularies without language context and as a result they forget the words easily or fail to use them correctly. The findings also focus on the poor communication among teachers teaching different English courses resulting in gaps in the understanding of their students' knowledge levels. Further

problems are found such as teaching that is focused more on language knowledge rather than developing students' learning strategies and abilities. In addition, the textbooks focus on writing construction of different genres rather than developing students' fundamental assumptions of texts.

In regard to pedagogical implications, in helping students learn and memorise new words, teachers have to take into consideration the following aspects. Firstly, teachers should help students remember words in meaningful context because words are remembered well if they are contextualised. Secondly, reading helps acquire new words. When students read, they see how words are actually used in context. Seeing how the words are used in particular texts is as important as learning their definitions. Thirdly, the more information students get about the words, the more likely it is for students to remember them and use them in proper context.

Communication between teachers is important to enhance teaching and learning. Teachers should be encouraged to cooperate with each other to exchange ideas to improve teaching. The communication not only helps teachers to know each other better in relation to teaching methods, contents, teaching experiences, but also helps teachers to know their students better to develop their learning ability. Therefore, it is necessary for teachers to communicate with each other about their teaching reflections, new ideas and teaching methods. Teachers are encouraged to co-teach, sit in each other's classes and have after class discussions for feedback from each other.

In a big class situation which is common in China, teachers have no time to mark all students' written works. In this case, teachers are encouraged to stimulate students' learning interest and to encourage students to collaboratively explore and share their understanding. Teachers should also encourage students' independent research and discussion about the topics of their writing in real social context. It is also teachers' responsibility to develop

students' problem solving and research abilities to communicate ideas and solutions, such as revising their own written work, peer-assessment and teamwork abilities.

In addressing the problem that textbooks focus on writing construction of different genres rather than developing students' fundamental assumptions, teacher adjustment is needed in response to students' learning and pedagogical requirements. Teachers should focus their attention not only on what textbooks presented but also on students' practical application as well as pedagogical requirements. Therefore, it is important to develop students' awareness of SFL grammatical and lexical features such as Theme and Rheme, lexical density, nominalisation and grammatical metaphor in writing and at the same time improve students' writing competence.

7.2.4.2. Findings from students' interview and their implications

With reference to Research Objective 4, the students' responses shed light on their attitudes and views on SFL; their reflections on the learning of the four grammatical features of Theme and Rheme, lexical density, nominalisation and grammatical metaphor; the effectiveness of SFL in improving their writing skills; difficulties they faced; and their feedback on the teaching of the four SFL grammatical features. The findings are reported according to the following themes: attitudes towards SFL, the reflection and views on the four SFL grammatical features, as well as the reflection and views on Theme and Rheme, lexical density, nominalisation, and grammatical metaphor. The implications are provided after the findings of each theme.

- *Attitudes towards SFL*

According to the data analysis of students' interviews in Chapter 6, six respondents' expressed their positive attitudes towards SFL and they were all impressed by the scientific analysis of SFL especially the three metafunctions. Most of them developed a general understanding of SFL and half of them expressed interest in learning SFL and thought the four grammatical features were very useful and effective in developing their writing capabilities. However, two students expressed their difficulties in dealing with the grammatical terms and one of them said that he was more interested in language application than SFL analysis.

Many universities in China offer courses on SFL in their MA and PhD programs. In the light of the findings, the need for offering courses on SFL at Bachelor level has been further confirmed on the basis of the students' positive attitudes towards SFL and their general understanding of SFL. Students' interest in learning SFL and their positive attitudes towards the effectiveness and usefulness of the four grammatical features in developing writing skills also reveal that teaching these four features can be conducted at Bachelors level, though there have been some difficulties in teaching and learning such as the terminologies and the applications of these features. In terms of the implications on teaching SFL in Chinese context, studies have shown that Chinese scholars are finding the study of SFL interesting and rewarding (Huang, 2002b) and many researches have been undertaking studies on SFL in China since 1990s. In this context, teachers of English in China should develop students' awareness of SFL and they should have well organised teaching plans or textbooks so that students can have good understanding of SFL and apply their knowledge in their writing. Teachers should also change their conventional teaching approach with a focus on the structural understanding of

language and they should consider other aspects such as function and semantics of the human language and its use in certain social context.

- ***Reflection and views on the four SFL grammatical features and implications***

Findings from the students' interviews regarding the four grammatical features are presented below in the order of Theme and Rheme, lexical density, nominalisation and grammatical metaphor. The implications are provided after the findings.

- **Theme and Rheme**

The students, on reflection, expressed positive views towards Theme and Rheme. Most respondents said they could use Theme and Rheme in their writing. Most respondents valued the awareness of coherent writing and the effectiveness of using thematic progression patterns to achieve better coherence in writing. Some respondents expressed their difficulties in using thematic progression patterns, their confusion with interpersonal and textual Themes, and that they could only apply their knowledge at sentences level rather than textual level.

The findings from the students' interviews draw attention to the positive outcomes associated with the students' understanding of Theme and Rheme concepts and textual development, as well as the effectiveness of teaching SFL in developing writing skills, even though students have certain limitations in their application. These are affirmative indicators of teaching Theme and Rheme for the purpose of developing the writing skills of Chinese learners of English in Chinese tertiary education. Therefore, teachers of English should develop SFL awareness and look beyond the traditional language understanding when teaching English writing and English language. From the

above indicators, Theme and Rheme concepts and thematic progression patterns can be effectively applied in teaching to develop students' awareness of selection of various thematic progression patterns in English writing. At the same time students will be aware of their weaknesses in dealing with the relationship between Theme and Rheme in their writing development.

- Lexical density

In regard to the findings of the students' responses in Chapter 6, the feedback to the teaching of SFL and the grammatical feature of lexical density was very positive. This was acknowledged by students' responses that they understood lexical density in terms of definition, function, measurement of lexical density of the clauses and texts, and the characteristics of written English. However, they still had difficulties in distinguishing spoken and written English and writing lexically dense clauses.

Variation in lexical density occurs in any piece of discourse. In spoken language, the lexical density tends to be low. However when the language is more planned and more formal, the lexical density is higher and written language tends to be somewhat denser than spoken language (Halliday & Martin, 1993). Given students' difficulties in distinguishing spoken and written English and writing lexically dense clauses, it is essential for teachers to show students more examples of spoken and written English and help them find the differences between the two styles. In addition, teachers should also introduce students to lexical items which decide lexical density in a clause. In scientific writing, almost all the lexical items in any clause occur inside just one or two nominal groups (noun phrases) (Halliday & Martin, 1993). The most difficult writing for reading comprehension is a text consisting of strings of lexical words without any grammatical words in between. In terms of scientific writing, teachers should show students how to understand scientific writing in which some sentence structures are simple but difficult to understand.

Furthermore, teachers should also develop students' abilities in writing lexically dense clauses by familiarising them with the nominal forms of the verbs and their correct suffixes.

- Nominalisation

The findings from students' feedback and views on teaching nominalisation in Chapter 6 indicate that some students used nominalisation and nominalised structures in their writing after they had learnt the feature. The findings also show that majority of the students interviewed seldom used nominalised forms in their writing and they had no awareness of nominalised structures and they knew little about the feature and the characteristics of written English, academic and scientific writing. Limited vocabulary was also one of the weaknesses.

Nominalisation is the resource of grammatical metaphor, which is one of the grammatical features of written language. It takes an important role in academic and scientific writing. According to the findings, the students noticed that using nominalisation or nominalised structure in their writing make their writing more written-orientated and formal. Thus, the students accepted the fact that nominalisation is important in written English. Therefore, developing students' awareness of the characteristics of written language, academic writing and scientific writing is most essential in the teaching of writing. It makes them aware of how to build a complex and abstract text and its subjective matter. Once they know the phenomenon, teachers should help them familiarise with the nominalised forms of the verbs. Nominalised structure is also helpful for students to use noun forms in a structured way. Reading is a very useful experience to develop students' vocabularies. The more they read, the more vocabularies they learn and the better they can write. In addition, reading also helps students learn new words in different contexts.

- Grammatical metaphor

Findings from the students' feedback and views on the teaching and learning of grammatical metaphor in Chapter 6 confirm that the students could understand the concept of grammatical metaphor and were aware of the congruent and metaphorical forms according to Halliday's study. However, the terms of grammatical metaphor, such as ideational metaphor, metaphor of transitivity, interpersonal metaphor, interpersonal metaphor of mood and modality, were confusing to the students. Other grammatical terms such as participants, processes or circumstances were quite different from the concepts they had learnt in traditional grammar. They had difficulties analysing clauses by using some SFL concepts and their applications.

The non-congruent ways of encoding language are referred to as grammatical metaphor (Halliday, 1994a, 1998b; Halliday & Matthiessen, 1999; Matthiessen, 1995a; Ravelli, 1988). Grammatical metaphor, especially in the form of nominalised processes, has been of particular importance in the evolution of scientific writing, and most notably that of the scientific research article (Halliday, 1988, 1998b; Halliday & Martin, 1993). Pedagogically, teachers should focus their attention on the non-congruent ways (grammatical metaphor) of encoding language by firstly helping students have a clear idea of what non-congruent forms refer to. Besides, students should be able to know how to make non-congruent forms. Furthermore, teachers should help students understand why and how Halliday defines different metaphorical forms so as to develop students' awareness and understanding of different terminologies in relation to grammatical metaphor. In addition, it is very important for teachers to stimulate students' interests in learning how different genre style expresses its meaning, for instance, the grammatical metaphor in the form of nominalised processes is one of the ways of scientific writing to express its meaning that is more abstract and subjective.

7.2.4.3. Students' participation in the classroom activities of SFL learning and teaching implications

With reference to Research Objective 1-(2), classroom observation was conducted in this study. The classroom observation mainly focused on the students' understanding of the four features through observing the students' classroom discussions and communication, and their involvement in the teaching activities. Four observation aspects are the focus of this study.

- ***Classroom discussion on thematic progression***

The findings from the classroom observation notes in relation to classroom discussion on thematic progression revealed that the students could cooperate effectively in the classroom discussion. For instance, in class discussion, they tried to seek others' opinions and share their own views with others. Students could use the knowledge they had learnt by finding the sequential relationships between Theme and Rheme to make coherent and logical paragraphs. These not only showed the students' interests in learning Theme and Rheme but also the usefulness of thematic progression patterns in developing writing competency.

In the light of students' active participation in the classroom discussion and the successful learning achievement through cooperative learning in class, teachers should encourage students to learn cooperatively, especially in Chinese learning context. Group activities improve their understanding of the subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of collective achievement. Students learn more effectively when they work cooperatively than when they work individually. Moreover, cooperative learning improves self-confidence and all students tend to be more successful when working in

groups. Besides, developing students' awareness of using what they have learnt in their writing is also important. Teachers are one of the most important resources in the classroom and they are responsible for creating a dynamic learning environment. Teachers are instructional leaders and guides. They should encourage students to bring their own experiences or what they have learnt to enrich their knowledge.

- *Classroom group work on lexical density*

The findings from classroom observation notes on classroom group work on lexical density indicate that the students' learning was active and purposeful. They finished their learning tasks through discussion, exploration, observation, comparison and using their own knowledge. It was a student-centred learning experience in which the students used their own learning and communicative strategies. In addition, they gave mutual support in collaborative learning and positive assessment.

According to the findings from the students' classroom group work, the students completed their tasks with enthusiasm. For language teachers, it is very important to stimulate students' interest and enthusiasm which are key factors for future learning. It is also very important for language teachers to encourage students to use their own learning style to best approach new learning. Apart from these, different from the traditional teacher-centred approach, student-centred active learning should also be used to develop students' active learning awareness to encourage them to discuss, debate, brainstorm, solve problems themselves, answer questions and formulate questions in class. In addition, teacher and students' assessments also promote teaching and learning because assessments not only measure students' mastery of what they have learnt but develop understanding of course material,

acquisition of critical thinking and create problem-solving skills as well as self confidence.

- ***Classroom observation on nominalisation***

Findings from the classroom observations on nominalisation reveal that the students' SFL learning was very active which reflected the students' interest in learning SFL and the usefulness of SFL grammatical features. They communicated with the teacher and tried to get instruction and information from the teacher in order to explore further or to gain a clearer understanding of what they had learnt.

Regarding the findings from the classroom observation on nominalisation, teachers should develop students' good learning habits to communicate with teachers or fellow students to share ideas and to learn from each other. Teachers should also provide students with opportunities to develop and enhance their knowledge, skills and abilities. Teachers should help students understand what they have acquired and use the knowledge in their future learning their professional development. Students should also be encouraged to explore and to experience various learning experiences to facilitate their future application of the knowledge being acquired.

- ***Classroom observation on grammatical metaphor***

The findings from the classroom observation on grammatical metaphor show that the students not only participated actively in the classroom activities but also demonstrated a team spirit, shared information with their team members and used what they have learnt to fulfil the tasks given to them. They tried to find ways to overcome their learning difficulties. They recalled what they had

learnt, used their learning resources, communicated amongst themselves and asked each other for help to finish their tasks.

The findings from the classroom observation on grammatical metaphor reveal that teachers' instruction and guidance are crucial. Language teachers should go beyond the traditional teacher-centred teaching approach and help students develop their self-learning abilities.

The teacher is circulating, redirecting, disciplining, questioning, assessing, guiding, directing, fascinating, validating, facilitating, moving, monitoring, challenging, motivating, watching, moderating, diagnosing, trouble-shooting, observing, encouraging, suggesting, watching, modelling and clarifying. (McKenzie, 1998)

It is also important for language teachers to develop students' awareness of using their learning resources especially in the Chinese learning context. Teachers may not be able to provide answers to all questions the students ask in view of the big class situation. Learning resources, such as notes, textbooks, journals, CD-ROMs and videos, are important components in facilitating students' learning. Teachers should develop students' awareness of selecting suitable learning resources.

7.3. Reflection on the research journey: what has been achieved and where to go from here?

7.3.1. Achievement

This study focuses on teaching SFL grammatical features to develop the writing skills of Chinese learners of English which will have great contribution to the application of SFL in teaching to develop the English writing

competence of tertiary students' in China. The achievements are summarised below.

- This study confirms the suitability and effectiveness of teaching SFL and its four grammatical features in developing the writing competence of Chinese learners of English in a tertiary context in China.
- This study indicates that the students' post-teaching writing was different from their pre-teaching writing. In their post-teaching writing exercises, the students had an awareness of using SFL grammatical features in their writing and their writing was more written-orientated and formal than in their pre-teaching writing exercises.
- This study identifies the difficulties and problems in relation to the understanding of SFL and its four grammatical features and it informs language teachers of students' weaknesses and ways to enhance their development.
- This study obtained the students' views on learning SFL and their application. It confirms the usefulness and appropriateness of SFL and its four grammatical features in developing the writing skills of Chinese learners of English.
- As an action research, this study provides useful pedagogical implications in the application of SFL and its four grammatical features in the teaching of English writing to Chinese students.
- This study confirms that the language teachers' views on the teaching of writing in the Chinese context were still very traditional. This study provides some theoretical and practical insights into the complexity of language and the teaching of writing.

7.3.2. Problems

Regarding the problems in the teaching and learning of SFL and its four grammatical features, the following three aspects emerge from this study:

1. The students were strongly influenced by traditional grammar, especially grammatical terminologies. They were not familiar with the terms used in SFL.
2. The students' exercises reveal that learning SFL and its four grammatical features' was greatly influenced by the students' English language competence. For example, when learning nominalisation, some students did not know the nominal forms of some verbs and adjectives. This resulted in incorrect use of nominal forms.
3. The students could understand a text but could not create a proper text. In other words, they learnt about writing but had few opportunities to write themselves.

7.3.3. Limitations

Research is a process and for me it is metaphorically a journey. At the end of my research journey, I have achieved the aims and the objectives set out on the onset. However, reflecting on the pathway that the journey has taken, I identify some weaknesses and limitations in my study.

1. The first problem is time. In this study, the teaching of SFL and its four grammatical features lasted a semester. SFL is new to tertiary students in China. The teaching time was too short to introduce SFL in detail to students and to expect them to understand the theory and translate it into practice.

2. The second issue is about the choice of genre in the teaching. The students' pre-teaching writing and post-teaching writing exercises in the study were confined to two genres: narrative and expository. Whereas the students may find it easy to handle grammatical concepts in general, when they are asked to write texts in different genres, they may not be able to apply the concepts learnt equally well across different genres. Thus this study could be enhanced if more genres are used.
3. This study has sample limitations. The pre-teaching and post-teaching writing comparison mainly centred on the comparison between groups of different levels rather than analysis of individual data. If detailed individual data analysis had been conducted, more interesting and useful findings would have been revealed.
4. This study has the limitation of questionnaire standardisation. The questionnaire was designed according to what the students had learnt. The part on the students' understanding of SFL was too general to be investigated in detail. The questionnaire needs further improvement to cover more SFL concepts.
5. This study is confined to one tertiary institution: the English Department of Taiyuan Teachers College. It is important not to assume that these findings will apply to other university students, in particular non-English major students in China.

This study is a very important attempt to apply SFL to EFL teaching and learning in China. Great advances have been made in introducing SFL in the last two decades to China, but it has been limited to descriptive applications of the theory such as translation studies of English and Chinese, analyses and descriptions of English and Chinese language within the Hallidayan framework, rather than on the teaching of English and/or Chinese (Huang, 2002). While

Australian systemicists have made good use of Hallidayan linguistics in language education, it is still a new development for Chinese foreign/second language educators.

This study may provide a new direction and a challenge to teachers who hold a firm view on traditional grammar teaching. Halliday's three metafunctions of language and the four grammatical features give Chinese teachers of English a broader way of looking at language and language teaching.

7.4. New directions to research

Systemic Functional Linguistics theory describes how language works and how people use language in social communication. It is functional and semantic rather than formal and syntactic in orientation and it takes the text rather than the sentence as its object. The grammar study becomes a study of how meanings are built up through the use of words or other linguistics forms. When people use language to express meanings, they do so in specific situations, and the form of the language that they use is influenced by the complex elements of those situations and the expression of meaning in written language is also affected by situations.

Where does it go from here? A study advises the research community not only what has been achieved but also what should be included in future research.

According to Matthiessen (2007), the new direction to the exploration of SFL should be conducted from two complementary vantage points: the phenomena under investigation (language and other semiotic systems) and metalanguages used to investigate these phenomena. The vantage point of the phenomena under investigation can be concerned with particular text types – registers or genres in terms of a context-based typology of registers or can be characterised in terms of the manifestation of language and other semiotic system at their

own order system. From the vantage point of the metalanguages (in their metacontexts), the potential is for translating between the different metalanguages involved, a mono-metalingual effort involving translation into the systemic functional metalanguage, or a multi-metalingual effort involving some form of “code switching” or “code mixing”.

In a Chinese context, research in SFL should go beyond the current focus on contrastive studies of English and Chinese in the areas of metafunctions of language, text analysis, lexicogrammatical issues and English and Chinese translation studies. Studies of SFL in the Chinese context should be more focused on the application of SFL in education, especially in the field of foreign language teaching rather than simply descriptive applications. The future research trend is the on wider application of SFL in Chinese analysis.

Another aspect which deserves research attention is to investigate the relationship between language, society and culture on the basis of SFL. In this way, one can use SFL as a theoretical framework to examine Chinese linguistic politeness, euphemism, conversational analysis, etc.

7.5. Conclusion

This conclusion marks the end of my research and also the end of the research journey that I have pursued over the past three years. The journey has been full of emotions: fear, excitement, anxiety, joy, desperation, exuberance, etc.

Initially I planned to climb many high mountains and cross the vast ocean of the SFL discourse in an attempt to bring all the great ideas to Chinese educators. This was reflected in my initial ambitious planning of research aims and objectives. However, the literature review process and the initial implementation of the action research in real life context brought about challenges which required critical consideration and revision of my overall research. The completion of this study is the end of my doctoral research but

most importantly it is the beginning of my extended journey deep into the fascinating world of theoretical linguistics and applied linguistics, particularly in the context of language education in China.

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APPENDICES

Appendix:

A. Sample of questionnaire

B. Interview questions

C. Letter to the dean

D. Letter to the students participants

E. Information sheet

F. Sample of students' narrative and expository writing

G. Sample of students' exercises

H. Ethics approval

APPENDIX A

Sample of Questionnaire

Topic: Writing development of Chinese learners of English: A systemic functional linguistics perspective

Part 1: Students' general information (Please tick whichever applies in the following choices.)

- 1. Group:** ☐ Experimental group
 ☐ Controlled group
- 2. Level:** ☐ 1. Elementary level
 ☐ 2. Intermediate level
 ☐ 3. Advanced level
- 3. What test have you taken ?**
- ☐ 1. Grade 8 test for English majors
 ☐ 2. Grade 4 test for English majors
 ☐ 3. None test

Part 2: Questionnaires on students' general understanding of SFL, the four grammatical features.

Please decide the following items are true (T- 3) or not sure (NS-2) or false (F-1) by drawing a circle around the response that most closely reflects your opinion:

Item No	Items	T 3	NS 2	F 1
Part 1 General Understanding of SFL				
1	The founder of the Systemic Functional Linguistics is M.A.K. Halliday.	3	2	1
2	According to SFL theory the structural shape of the clause in English is determined by the three metafunctions - ideational, interpersonal and textual (Halliday, 1985b, p. 53). These are the three kinds of meaning that are embodied in human language as a whole, forming the basis of the semantic organisation of all natural languages.	3	2	1
3	SFL concerns with meaning and how language is used.	3	2	1
4	Functional grammar explores ways in which English grammar enables speakers and writers to represent their experience of the world, to interact with one another, and to create coherence messages.	3	2	1
Part 2 SFL grammatical feature of Theme and Rheme				
5	Theme functions as the 'starting point for the message', the element which the clause is going to be 'about'.	3	2	1
Part 3 SFL grammatical feature of lexical density				
6	Lexical density is a measure of the density of the information in any passage of text, according to how tightly the lexical items (content words) have been packed into the grammatical structure.	3	2	1
7	The higher lexical density of a sentence, the more information is given in the sentence.	3	2	1
8	Lexical density distinguishes spoken language from written language. The lexical density of spoken language is lower than that of written language.	3	2	1
Part 4 SFL grammatical feature of nominalisation				
9	In linguistics, nominalisation refers to the use of a verb or an adjective into a noun, with or without morphological transformation, so that the word can now act as the head of a noun phrase.	3	2	1
10	Nominalisation builds long noun phrases to produce a lexically dense style in which the tone of the writing sounds more abstract, more formal and more academic.	3	2	1
Part 5 SFL grammatical feature of grammatical metaphor				
11	A grammatical metaphor is a substitution of one grammatical class, or one grammatical structure, by another; for example, "his departure instead of he departed."	3	2	1
12	Grammatical metaphor is the expression of a meaning through a lexical-grammatical form which originally evolved to express a different kind of meaning. The expression of the meaning is metaphorical in relation to a different way of expressing the 'same'	3	2	1

	meaning which would be more congruent.			
13	There are two main types of grammatical metaphors in the clause: metaphors of mood (including modality) and metaphors of transitivity.	3	2	1
14	In terms of the model of semantic functions, there are interpersonal metaphors and ideational metaphors.	3	2	1
15	'Congruent' forms are the 'typical ways of saying things' or 'the way it is most commonly said' or 'the way it is said in the absence of any special circumstances'.	3	2	1
16	Grammatical metaphor of transitivity makes writing more vivid and expressive.	3	2	1

Part 3: Questionnaires on the students' ideas of the usefulness of four grammatical features of SFL.

(Please decide how much you either agree or disagree with each.)

Please respond to the following items by drawing a circle around the response that most closely reflects your opinion:
Strongly agree (SA-5), agree (A-4), not sure (NS-3), disagree (D-2), or strongly disagree (SD-1).

Item No	Items	SA 5	A 4	NS 3	D 2	SD 1
Part 1 General Understanding of SFL						
1	Theme theory is not difficult to understand.	5	4	3	2	1
2	After learning Theme concept, I have the awareness of thematic progression of English language which helps develop coherence and logical idea of the writing.	5	4	3	2	1
Part 2 SFL grammatical feature of lexical density						
3	I can write lexically dense sentences in my writing.	5	4	3	2	1
Part 3 SFL grammatical feature of nominalisation						
4	It is very hard for me to use nominalisations in my writing.	5	4	3	2	1
Part 4 SFL grammatical feature of grammatical metaphor						
5	'The People's Republic of China was founded in 1949.' is the congruent mode of expression.	5	4	3	2	1
6	'Nineteen forty-nine saw the founding of the People's Republic of China.' is the metaphorical mode.	5	4	3	2	1

APPENDIX B

WRITING DEVELOPMENT OF CHINESE LEARNERS OF ENGLISH: A SYSTEMIC FUNCTIONAL LINGUISTICS PERSPECTIVE

Interview 1: Schedule

Teacher: _____

Date of interview: _____

Starting time: _____

Finishing time: _____

The aim of the teachers' informal interview is to investigate the teachers' views on teaching English writing to Chinese learners of English which reflects the teachers on their experience in teaching English writing, language expressions in writing, spoken and written English, typical mistakes made by Chinese students in English writing, academic writing, Chinese thought patterns and language base are reported. The interview questions are as follows:

1. How do you think of students' language expressions in English writing?
2. What are the challenges for students to distinguish spoken and written English in their writing?
3. How do you think of students' awareness of cohesion and coherence in their writing?
4. Could you please talk about the cultural influences to students' English writing?
5. What are the current problems in the teaching of English writing?

Interview 2: Schedule

Student: _____

Date of interview: _____

Starting time: _____

Finishing time: _____

The aim of the students' informal interview is to investigate students' views on learning SFL and their application which focuses the general understanding of SFL, difficulties and problems, interests in learning SFL and its effectiveness in improving their writing skills. The interview questions are as follows:

1. How do you think of SFL?
2. What is your opinion of Theme and Rheme theory in developing English writing?
3. How do you think of the importance of learning lexical density?
4. Do you think learning nominalisation is important? Why?
5. How do you think of the grammatical metaphor?
6. What are the difficulties and problems in learning the four SFL grammatical features to develop English writing?

APPENDIX C



UNIVERSITY
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Dear Dean Dai,

I'm currently undertaking PhD in the Faculty of Education, University of Tasmania. This research study is entitled "*Writing Development of Chinese Learners of English: A Systemic Functional Linguistics Perspective*".

This study will examine the Systemic Functional Linguistics (SFL) theory to explore the suitability of SFL to develop writing of Chinese learners of English. SFL developed by Halliday. It has four grammatical features: Theme and Rheme, lexical density, nominalization, and grammatical metaphor, which are the useful theoretical concepts to help understand how language works in terms of linguistic complexity. Developing an awareness of these grammatical features is crucial to students. Teaching of SFL will be given to students to examine the effectiveness of developing writing of Chinese learners' of English.

Dr Thao Le is the supervisor for the research project. The study will compare students' writing differences between pre-teaching and post-teaching of the four grammatical features of SFL to see the difficulties and problems of using the four grammatical features in the process of teaching and learning. The study will then investigate students' general understanding of the grammatical features of SFL and their application. Teachers' views on the teaching of writing to Chinese learners of English and students' views on learning SFL and their application of SFL will also be investigated. Methods used will include questionnaire survey and interview. Classroom observation will also be undertaken to see students' involvement in the classroom activities during the process of learning SFL and to gauge students' interests in learning SFL. The effectiveness and some pedagogical implications of using the four grammatical features of SFL in teaching English writing to Chinese learners of English will also be examined.

The following procedures will be taken:

According to the research design in this study, 180 participants from your departments are going to take part in the research. The participants will be divided into two main groups: experimental and controlled group. Each group has 90 students of three levels, elementary, intermediate and advanced level. Each level of experimental and controlled group has 30 students.

Your permission is requested for us to give teaching of SFL and to invite students to have the SFL classes for one semester (48 hours).

I would be very appreciative of you if you could allow us to involve your students in our research study.

Thank you for your assistance.

Xuefeng Wang (Helen)

Ph: (03) 6324 3792

Email: xfwang@utas.edu.au

xuefengwang_669@hotmail.com

APPENDIX D



UNIVERSITY
OF TASMANIA

Faculty of education

Locked Bag1307

Launceston 7250

Request to participate in the Systemic Functional Linguistics teaching and learning

Dear participant,

We would like to invite you to participate in the following research study entitled, *"Writing Development of Chinese Learners of English: A Systemic Functional Linguistics Perspective."*

This study will examine the Systemic Functional Linguistics (SFL) theory to explore the suitability of SFL to develop writing of Chinese learners of English. SFL developed by Halliday has four grammatical features: Theme and Rheme, lexical density, nominalization, and grammatical metaphor, which are the useful theoretical concepts to help understand how language works in terms of linguistic complexity. Developing an awareness of these grammatical features is crucial to you. Teaching of SFL will be given to you to examine the effectiveness of developing writing of Chinese learners' of English. If you would like to attend the classes, please sign your name at the bottom of the letter.

Dr Thao Le is the supervisor for the research project. The study will compare the writing differences between pre-teaching and post-teaching of the four grammatical features of SFL to see the difficulties and problems of using the four grammatical features in the process of teaching and learning. The study will then investigate your general understanding of the grammatical features of SFL and your application. Teachers' views on the teaching of writing

to Chinese learners of English and your views on learning SFL and your application of SFL will also be investigated. Methods used will include questionnaire survey and interview. Classroom observation will also be undertaken to see your involvement in the classroom activities during the process of learning SFL and to gauge your interests in learning SFL. The effectiveness and some pedagogical implications of using the four grammatical features of SFL in teaching English writing to Chinese learners of English will also be examined.

If you would like to participate in the research study, you will attend SFL classes 3 hours each week for a semester (48 hours). In addition to this, you will have to write an essay before and after the SFL teaching to compare your progress of writing.

The researcher is aware that this study deals with human participants and there are ethics requirements to ensure that no one will suffer as a result of participation and that the researcher will avoid disclosing the pre-teaching and post-teaching writing results of the participants involved. The writing of the participants' will be anonymous and this in fact encourages the participants to attend the classes without any loss of self-esteem or anxiety. The pre-writing and post-writing of SFL teaching will not have participants' names on. The researcher will also be open and honest. All the pre-writing and post-writing data will be kept secure at the Faculty of Education, University of Tasmania. It is ethical to inform potential of the purpose of a study and to obtain your agreement to your participation. Therefore, the Minimal Risk Application Form ethics application for the approval to conduct the research will be sent to the Northern Tasmania Social Sciences Human Research Ethics Committee.

As with all involvement in the research studies, your participation in the study is voluntary. The Human Research Ethics Committee (Tasmania) network has given ethical approval for this project (Reference number: H 9033). If you have any concerns or complaints about any aspect of the study, you may contact the Ethics officer – Social Sciences Office of Research Services, University of Tasmania, Ms Marilyn Knott (Tel: 6226 2764).

Thank you for your participation in the study.

Yours sincerely,

Xuefeng Wang (Helen) Thao Le

13th, Sep. 2006

Contact Persons:

Dr Thao Le (supervisor)

(03) 6324 3696

T.Le@utas.edu.au

Xuefeng Wang (PhD candidate)

(03) 6324 3792

xfwang@utas.edu.au

If you are willing to participate in the SFL teaching activity, please sign your name here.

Signature of participant: _____

Date: _____

APPENDIX E

UNIVERSITY OF TASMANIA
School of Education
Dr. Thao le
Senior Lecturer
Locked bag 1-307, Launceston
Tasmania 7250 Australia
Telephone: 03 63243696
(International) 6136324 4696
Fax: 036324 4040
Email: T.Le@utas.edu.au

Information for students

Your lecturer, Ms Xuefeng, is undertaking a study for her PhD thesis in the Faculty of Education at the University of Tasmania. The topic is "Writing Development of Chinese Learners of English: A Systemic Functional Linguistics Perspective. It is supervised by Dr. Thao Le.

This study is aimed to research on the impact of Systemic Functional Linguistics theory developed by Halliday and its four grammatical features, Theme and Rheme, lexical density, nominalisation and grammatical metaphor upon the development of Chinese EFL tertiary students' English writing. It will take place in normal classes of the course except that some linguistics students will have an emphasis on Systemic Functional Linguistics in their linguistics lessons while others still has received approval of Ms. Wang's Dean.

We are aware that this study deals with students and there are ethics requirements to ensure that no one will suffer as a result of participation and that we will not publicly disclose the pre-teaching writing test and post-teaching writing test results of those participants involved. Each student will be coded such as S1, S2, S3 etc. All the pre-teaching writing test and post-teaching writing test data will be kept secure at the Faculty of Education, University of Tasmania.

We should like to assure you that no extra work will be added to your normal learning load. Ms Wang will talk to you in details about this study. If you require any further details, please contact Ms Wang individually during or after class. You are most welcome to contact us at the address given at the top of this letter.

Yours sincerely

Thao Le and Xuefeng Wang

APPENDIX F

Sample of students' narrative and expository writing

Elemental level: Sample 1

An Unforgettable Experience

It was the summer holiday of 2000. I went to travel with my mother and her colleagues to Luya Mountain. The moment we arrived at the top of the mountain, the guide told us that he must go away immediately because he had something very important to do. We were all confident to find the way back by ourselves, so we said goodbye to the guide happily.

After we enjoyed the landscape fully, we'd like to return. We were talking and singing all the way until a little girl shouted, "Look! What is it?" We all stopped talking and looked at the place where the girl pointed. Oh, dear, there was a small wolf! We were all frightened, and it became silent at once. The wolf stared at us for a few seconds and then ran away.

We looked at each other without saying a word. Then we looked around, but there was nobody except us. We had to admit that we had lost our way.

It was said there were seven tigers and many wild animals in the mountains. We felt worried. At first, we wanted to go back, but then we found it was impossible because we didn't have enough time to find the right way before sunset. The only way was to go on this wrong way to find the right way.

About six hours later, we were all exhausted. We sat down on the grass and breath with difficulty. Suddenly, an uncle pointed to a faraway place and shouted, "Is there a highway? Oh, yes, it is!"

After an hour or so, we got to the highway and we were lucky to find a car to sent us back to the hotel.

It was a breathtaking experience and I will never forget it.

Elemental level: Sample 2

An Unforgettable Experience

Without having lunch, I was waiting in a street corner. Some one had promised that he would bring me a birthday cake. That day was my birthday.

I had never met him before. We were only friends in the chat room on the internet. We live in the same city but had never seen each other. When I told my friend about the appointment between us, they looked very surprised. "Are you crazy? How can you believe a person on the

internet?" They tried to persuade me to quit the point because they thought it must be a dangerous thing.

I insisted on having the appointment. After a long time, a young man caught into my eyes and he was standing on the opposite of the road side with a birthday cake. He smiled friendly and went up to me when he saw me waving to him.

The next thing went on smoothly. We had a pleasant lunch together during which we lighted the birthday candles. We talked happily like on the internet. It was a feeling that we were good friends long ago.

He said he was a little worried about the appointment before seeing me, but after meeting me he felt happy. We talked and talked even without noticing the time was flying.

I had an unforgettable birthday because of his coming. Now we are still good friends on both internet and in real life.

I believe that everybody can become friends as long as everyone is sincere.

Intermediate level: Sample 1

An unforgettable experience

On July 26th, 2004, our school sent my colleagues and me to Beijing for seven-day training. On August 3rd, we were free, so I visited one of my friends that day.

My friend studied in Beijing Normal University. It was holiday. She found a part time job. She still lived at school. It was the first time that I went to Beijing. It was a long way from my hotel to her school. To save time, I took the taxi, but it was very expensive. It cost me 56 yuan. At that time I decided I would go back by bus.

At 2pm. I arrived at her school. We chatted for a while and then went shopping. I must go back to the hotel that day because we would leave for my hometown the next day. Later in the afternoon, about 6pm I decided to go back to my hotel. Unfortunately, there was no bus going directly to my hotel. I had to change several buses, though I did not know what bus I had to change and my friend did not know either because she was also not familiar with Beijing. Beijing is so big. She said you had mouth under your nose and you could ask. I said goodbye to each other and separated

First I took bus No. 10 to Qianmen. At Qianmen station, I asked several people how to get to my hotel and what bus I had to take. I got several different answers. I was confused. "Whose answer was right?" I asked myself. At last I accepted an old man's answer. After getting on the bus, I know from the bus assistant I went to the opposite direction. She told me the way to my hotel, so I had to get off the bus at the next stop. I changed 3 buses and arrived at my hotel finally. It was about 9pm. I thought if I had a mobile, the situation would be very different.

Intermediate level: sample 2

An unforgettable experience

On an evening class in a primary school, the students were busy doing the homework in the bright light. The classroom was surprisingly quiet.

As an excellent student in our class, I was carefully and quickly doing it to be the first top. Of course, my desk neighbour Zhang Jian was also unusually careful, seemingly to compete with me.

Suddenly, my desk shaking disturbed my concentrating on my homework. "Hello, May I use your pen? Mine does not have ink." Zhang Jian asked in a low voice, pushing my desk lightly. I had no answer. A second, two seconds... My heart was beating when he seemed to looked at me carefully, but not to know how to ask for help. Then the pair of helpless eyes told me, "You are too cold and ruthless." As time goes, my heart was beating more and more quickly.

"Sorry, I don't have an extra pen, either and you can use my ink." I said while pushing the ink bottle towards him. Suddenly, his snow-white and new shirt was stained by ink rudely. The stains were spreading everywhere. "Oh, my God, what on earth are you doing?" he cried, staring at me.

Pairs of pairs of eyes came to look at me together. My face flushed and felt very hot at one. "Sorry, I don't have any intention. I will buy a new shirt for you."

The classroom boiled. Many students crowded around us. They stood at him and complained about me for the thing. At that moment, tears filled wit eyes. He patted slightly pat on my shoulder and said with smile, "No matter what happened, we are always good friends."

The bell rang. I sat quietly at my desk and started writing the diary about the unforgettable experience.

Advanced level: Sample 1

An unforgettable experience

In this summer vocation, I worked as a tutor. My student was a ten-year old girl named Wang Liyang. She had learned English for one year but was not interested in it. To call her interest in English, I was invited to teach her.

At the beginning, I realized that she did not know the 26 English letters even though she had one year's English study. She told me that she did not like English. I thought I came cross a difficult problem which I should solve as soon as possible. I was allowed to carry my plan to teach her after communicating with her father.

First, I taught her the 26 English letters with English songs. She liked singing songs very much, so she learnt it very fast and well. And then, I started to let her write the letters. She followed

my action to get down them with ugly writing on her notebook. I helped her improve the writing. Thus, her hand writing was better.

Second, I taught her phonetic symbols. For the first time to learn, I taught her five phonetic symbols at a time adding to four words as examples. I found that she was interested in phonetic symbols because they are similar with Chinese phonetic alphabets. So I began to encourage her to learn it well and helped her learn words by heart. Gradually, she realized that she began to take interest in English.

Seeing her improvement I was delighted and her father was very happy and gave me great thanks. At the same time I realized that it was very important to stimulate students' interest in learning English.

Advanced level: sample 2

An unforgettable experience

Since this was the first time for me to be a teacher for junior students, I felt extremely nervous. And now it was the time to start the first meeting for those sixty students and their parents.

As a teacher, I had to introduce myself first. With the shining eyes staring at me, my heart was beating fast. Then I took a deep breath and gave a detailed introduction in coherently and quickly. Although I had prepared the speech very well, I performed badly. The students and their parents gave me an exciting welcome. I had to know who the students were, so I called the names of them according to the name list. Everything went well at first, but a Chinese character which I did not know appeared on the paper. Unknowing how to read the character, my face turned red, and I read it wrongly. At that moment, all the people there laughed. Some students kicked the desks and some talked to each other loudly. And even some directly said to me that I read the word incorrectly. While in such a situation, I felt ashamed of myself.

Suddenly one of the parents stood up and said that they should respect the teacher, and then all the people shut their mouths. Then I raised my head and said sorry to them. This time they gave me another welcome. All of us were smiling and I continued calling the roll.

Expository essays of the experimental group of three levels:

Elementary level: Sample 1

Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?

With the development of science and improvement of living conditions employment between men and women are unequal in some aspects. For example, men and women can receive the same education and they are treated equally by law. However, there are still some inequality and prejudice. For another example, many high-level jobs are done by men. In my opinion, this

is unequal. The government should encourage a high-percentage of high-level jobs presented for women.

There are three reasons for this. First, women have the same capability to deal with problems as men. Besides, women's thinking is different from men's, so they can treat the problems from a different angle. Sometimes this is more helpful. Second, women are more careful, serious and cautious, so that they can solve a problem perfectly. Third, women are sensitive to language, and so they can act as a diplomat

In conclusion, there are more advantages for women to do high-level jobs.

Elementary level: Sample 2

Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?

When we watch TV about the important meeting, we could find that only a few women are there. Today, many high-level jobs are done by men, but I think more women can be encouraged to do the high-level jobs.

In traditional ideas, men work outside and women do housework and take care of the family at home. Because of this kind of idea, people think that women are good at doing housework and not good at working outside. Actually, women are as good as men on jobs. They are diligent and hardworking. The more important thing is that women are more thoughtful than men. We all know many kinds of jobs need the workers who must be very careful about their jobs because the small part of the jobs may lead to fail. Although men can employ many women to be their secretaries to do the trivial jobs, if the leaders were women, she and her secretary can do the work better.

All in all, women have many superiorities of doing the high-level jobs. So the government and all people should encourage the women to do the jobs.

Intermediate level: Sample 1

Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?

Nowadays, a hot topic is argued that government should or should not encourage a high-percentage of high-level jobs for women. Most men gave a negative answer. In my point of view, the government should encourage high-level jobs for women.

I give two reasons to support the view. First, women have equal rights as men do. Everyone has equal rights including women. Therefore, women should be treated equally and given the same opportunities to show themselves rather than be looked down upon to do only low-level jobs. Second, women are as competent as men or even more competent than men. A survey shows that the majority of the college students are female that is the percentage of women who

have high education is higher than that of men. So it is very wise for government to encourage a high-percentage of high-level jobs preserved for women who have had high education because they can do better.

All in all, both the equal notion and women's competence are beneficial to women.

Intermediate level: Sample 2

Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?

Today, women do not have equal opportunities for jobs, especially for high-level jobs. And the percentage of high-level jobs for women is much lower than men's. So I think the government should encourage a high-percentage of high-level jobs preserved for women.

There are two reasons to support my idea. First, some women are much cleverer than men. Song Qingling is a woman who spent all her life to save China. In fact, in our society there are many women like Song Qingling. If we do not give the chance to them, our country may lose fortune. Second women's thoughts are different from men's. They may think of things from different aspects. If we discuss important things, we must consider women's ideas.

In a word, women should have equal opportunities for high-level jobs.

Advanced level: Sample 1

Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?

Do you think only man can do high-level jobs? I don't think so. Women are equal to men and they have abilities but not have chances, so they need the government to preserve high-level jobs for them.

I admit that there are differences between men and women such as physical strength, but in intelligence, women are not inferior to men. If they are given the same thing to do, women can do it better than men since they are more patient and careful.

Of course, especially the old people think that men are stronger and more important than women. If a company manager wants to employ someone, a man is selected first, however for a woman, she even has no chance to compete with man. From the very beginning, it is not an impartial competition.

Now, it is a modern society, women are not satisfied with working at home as a housewife, they want to work outside like men. They can also do things well, they also have the abilities to lead other people including men. However, the government give them fewer chances to show their competence.

If the government encourage a high-percentage of high-level jobs preserved for women, women will have a big stage to show themselves. People will give women chances, and women will create miracle in return.

Advanced level: Sample 2

Many high-level jobs are done by men. Should the government encourage a high-percentage of high-level jobs reserved/preserved for women?

In my opinion, there is no doubt that government should encourage a high-percentage of high-level jobs preserved for women. Women have their own good qualities which men are lack of, however, a well-done job calls for all good human qualities. In addition, if more women participant the high-level jobs, the society structure will be changed into a more harmonious one.

For the first thing, what really matter is not who has the right to do the job but who can do the job better. As we all know, women work as hard as or even harder than men, so they have the abilities to do their jobs as good as men or better than men. There is a Chinese saying, "Where there is hardworking, there is harvests." It is reasonable for women to gain as many equal opportunities as men do.

On the second hand, differences on physiological functions are not the only thing that can tell women and men apart. Patience, carefulness and tenderness are women's good qualities. Why don't the government encourage more high-level positions for women in order that the high-level jobs can be done better.

Thirdly, to give more chance to women is good for a more harmonious society. Suppose only few women have the right to high-level jobs, the prejudices and discriminations towards women will be more serious. From this perspective, the government must encourage women to do high-level jobs.

Shortly, the government should encourage a high-percentage of high-level jobs preserved for women. Only by this way, the jobs can be better done and the society can be more harmonious.

APPENDIX G

Students' exercises

SFL feature of Theme and Rheme

Exercises 1

Please identify and underline the Themes of the following sentences.

1. You probably haven't heard of the SOU before. (You)
2. The language that the Eskimo people speak around the top of the world, in places as far apart as Siberia, Alaska, Canada, and Greenland, differ quite a lot in details of vocabulary. (The language that the Eskimo people speak around the top of the world, in places as far apart as Siberia, Alaska, Canada, and Greenland)
3. Last night a man was helping police inquiries. (Last night)
4. This large sixth form college is one of only two offering boarding accommodation. (This large sixth form college) (Adjunct as Theme)
5. Out of Britain's 37 most senior judges, only one is a woman. (Out of Britain's 37 most senior judges) (Adjunct as Theme)
6. Leave the lamp here. (Leave) (Theme in imperative clauses)
7. Don't cry about it. (Don't cry) (Theme in imperative clauses)
8. What a nice plant you've got! (What a nice plant) (Theme in exclamative clause)
9. How absolutely lovely she looks tonight! (How absolutely lovely) (Theme in exclamative clause)
10. Let's go for a walk, shall we? (Let's) (Theme in imperative clauses)

Exercises 2

Identifying marked topical Theme (declaratives) Identify the Topical Theme and classify as unmarked or marked. For example:

One winter night the little girl saw two strange beings creep out of kitchen. (M)

By this time they were getting near their school... (M)

The Queen yesterday opened her heart to the nation. (U)

1. My car is the same colour as yours.
2. For at least two hours the boy loved him...
3. Last night a man was helping police inquires.

4. Everybody sits out there at this time of the year.
5. After the party, where did you go?
6. There's the tin-opener.
7. Have you finished your meal, sir?
8. Blinking nervously, he tried to think of something to say.
9. People like us, in the middle, we have to be careful about the children we have.
10. As the universe expended, the temperature of the radiation decreased.

Exercises 3

According to patterns of Thematic progression we have learnt in this unit, rearrange each group of the following sentences, so as to make it a coherent paragraph and then draw the Thematic pattern of the paragraph.

- A. Of the effects caused by vitamin a deficiency, those involving eye diseases are the most pronounced and widespread.
- B. Another result of vitamin A deficiency is skin dryness.
- C. What children eat can affect their health.
- D. Several thousand children become blind each year because of this dietary deficiency, which is most prevalent in poor, non-industrialized countries.
- E. Children who do not eat enough foods containing vitamin A can develop serious nutritional disorders.

C → E → A → D → B

What children eat can affect their health. Children who do not eat enough foods containing vitamin A can develop serious nutritional disorders. Of the effects caused by vitamin a deficiency, those involving eye diseases are the most pronounced and widespread. Several thousand children become blind each year because of this dietary deficiency, which is most prevalent in poor, non-industrialized countries. Another result of vitamin A deficiency is skin dryness.

T 1 (C) ----- R 1
 T 1 (E) -----R 2
 T 2 (A) -----R 3
 T 3 (R3) -----R 4
 T 4 ----- R 5
 T 5 (R 5) -----R 6
 T 5 ----- R 7

Exercises 4

Please write a paragraph with at least 4 sentences and then draw the Thematic pattern.

Sample 1

My friend John shows a variety of merits. He is very kind to people. He used to have a heart-to-heart talk with them. He is always ready to help others. He offers great generosity to the suffering people by sending victims money from his savings.

T 1 ----- R 1
 T 1 ----- R 2
 T 1 ----- R 3
 T 1 ----- R 4
 T 1 ----- R 5

Sample 2

Last summer, I went to a beautiful beach. The beach is famous for its bright sunshine, coldness and fascinating landscape. All of these attract thousands of people to spend their summer vacation there. These people are from all over the world, staying there to get enough sunshine, avoiding the heat in their hometown and enjoying the picturesque landscape.

T 1 ----- R 1
 T 2 (R1) ----- R 2
 T 3 (R2) ----- R 3
 T 4 (R3) ----- R 4

SFL feature of lexical density (The lexical words are in bold type.)

Exercises 1

Identify content words and function words in the following sentences.

- The **dogs ran** in the **garden**.

Content words: dogs, ran, garden

Function words: The, in, the

- These **students want to go** to **school**.

Content words: students, want, go, school

Function words: These, to, to

- **Rich students live** in **beautiful big houses**.

Content words: Rich students, live, beautiful big houses

Function words: in

Exercises 2

Consider the ratio of the content words in a sentence.

- I **worked** here. (1/3)
- I **bought a huge bike**. (3/5)
- **Stupid people work** carelessly. (4/4)

Exercises 3

Consider the sentences below and then tell the number of content words in each sentence and how much information there is in this particular piece of writing or how many meanings have been packed into the one clause.

- Magnetic materials are materials that are attracted to magnets.
- In a chemical change, the materials break down completely.
- Materials that can carry electricity are called conductors – they conduct electricity.
- My mother used to tell me about the singer in her town.
- I'm going to the shop to get some food for the dinner.

(The lexical words are in bold type.):

- **Magnetic materials are materials that are attracted to magnets.** (5)
- **In a chemical change, the materials break down completely.** (6)

- **Materials that can carry electricity are called conductors – they conduct electricity. (6)**
- **My mother used to tell me about the singer in her town. (4)**
- **I'm going to the shop to get some food for the dinner. (3)**

Exercises 4

Please read the following sentences and count the total number of the words and the number content words and then calculate the lexical density of each sentence.

1. **The osmoregulatory organ, which is located at the base of third dorsal spine on the outer margin of the terminal papillae and functions by expelling excess sodium ions, activates only under hypertonic conditions.**

$$18/34 \times 100\% = 52.9\%$$

2. **Located on the outer margin of the terminal papillae at the base of the third dorsal spine, the osmoregulatory organ expels excess sodium ions under hypertonic conditions.**

$$16/27 \times 100\% = 59.25\%$$

3. **Comparison of the amount of nitric oxide remaining in the first part with the total amount of nitric oxide in the second makes it possible to infer the level of smog.**

$$15/31 \times 100\% = 48.4\%$$

4. **The difference in the nitric oxide concentrations between the two gives a measure of the rate of smog formation.**

$$9/19 \times 100\% = 47.4\%$$

5. **Consistently high overnight levels of reactive hydrocarbons highlighted the importance of air flows in the Hawkesbury basin that can trap emissions during the night.**

$$15/24 \times 100\% = 62.5\%$$

Exercises 5

Write two sentences which are lexically dense.

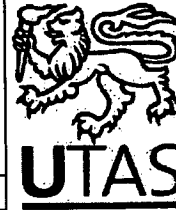
Sample 1

1. The **comparison of the difference between Chinese and English makes learners feel easy to learn English well.**
2. The **use of electronic dictionary makes it convenient for learners of English to find the meanings of new words.**

APPENDIX H

MEMORANDUM

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Marilyn.Knott@utas.edu.au
<http://www.research.utas.edu.au/index.htm>



HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

MINIMAL RISK APPLICATION APPROVAL

15 September 2006

Dr Thao Le
Education
Private Bag 1307
Launceston

Ethics ref: H9033

Writing development of Chinese learners of English: A systemic functional linguistics perspective.

Student: Xuefeng Wang (PhD)

Dear Dr Le

Acting on a mandate from the Tasmania Social Sciences HREC, the Chair of the committee considered and approved the above project on 15 September 2006.

All committees operating under the Human Research Ethics Committee (Tasmania) Network are registered and required to comply with the *National Statement on the Ethical Conduct in Research Involving Humans 1999* (NHMRC guidelines).

Therefore, the Chief Investigator's responsibility is to ensure that:

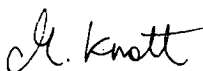
- 1) All researchers listed on the application comply with HREC approved application.
- 2) Modifications to the application do not proceed until approval is obtained in writing from the HREC.
- 3) The confidentiality and anonymity of all research subjects is maintained at all times, except as required by law.
- 4) Clause 2.37 of the National Statement states:
An HREC shall, as a condition of approval of each protocol, require that researchers immediately report anything which might warrant review of ethical approval of the protocol, including:
 - a) *Serious or unexpected adverse effects on participants;*
 - b) *Proposed changes in the application; and*
 - c) *Unforeseen events that might affect continued ethical acceptability of the project.*

The report must be lodged within 24 hours of the event to the Ethics Executive Officer who will report to the Chairs.

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- 5) All participants must be provided with the current Information Sheet and Consent form as approved by the Ethics Committee.
- 6) The Committee is notified if any investigators are added to, or cease involvement with, the project.
- 7) This study has approval for four years contingent upon annual review. An *Annual Report* is to be provided on the anniversary date of your approval. Your first report is due [12 months from 'Ethics Committee Approval' date]. You will be sent a courtesy reminder by email closer to this due date.
Clause 2.35 of the National Statement states:
As a minimum an HREC must require at regular periods, at least annually, reports from principal researchers on matters including:
 - a) *Progress to date or outcome in case of completed research;*
 - b) *Maintenance and security of records;*
 - c) *Compliance with the approved protocol, and*
 - d) *Compliance with any conditions of approval.*
- 8) A *Final Report* and a copy of the published material, either in full or abstract, must be provided at the end of project.

Yours sincerely



 Ethics Executive Officer